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CONGRESS OF THE UNIVERSITIES OF THE EMPIRE 1921

REPORT OF PROCEEDINGS

Universities Year Book.

ISSUED EARLY IN THE YEAR.

A conspectus of the Calendars of all the Universities of the British Empire; giving names and degrees of their administrative and teaching staffs; brief accounts of their origin, constitution, equipment, organisation, curricula, degrees and diplomas, fees, residential accommodation, etc.; summaries of outstanding events of the preceding year; appendices dealing with matters of interest to students, *e.g.*, regulations of professional and licensing bodies, inter-university scholarships and grants in aid of research; information regarding foreign universities.

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SECOND CONGRESS OF THE UNIVERSITIES OF THE EMPIRE

1921

REPORT OF PROCEEDINGS

EDITED BY

ALEX HILL, O.B.E., M.A., M.D.

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OF THE BRITISH EMPIRE



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FOREWORD.

At the final meeting of Delegates to the Congress of Universities of the Empire which met in London in 1912 it was resolved that it is desirable that similar Congresses should meet in future at intervals of five years. The responsibility for summoning them was entrusted to the Universities Bureau, which, for this, amongst other purposes, it was then decided to establish. This scheme, like many others, was inhibited by the war. After its victorious ending, the Bureau Committee took steps with the object of arranging for a Congress in 1920; but on the advice of the Government, by whom the Committee were informed that there would still, at that date, be difficulty in securing passages on ocean steamships, the Congress was postponed until the present year.

In August, 1920, all Universities of the Empire were asked to submit proposals for Agenda for the Congress, and in November a Sub-Committee consisting of the Vice-Chancellors of Oxford and Cambridge, together with the Chairman, Treasurer and Secretary of the Bureau, having considered such proposals as had been sent in, drew up a programme, which was submitted to the Universities and approved. The Agenda of the first Congress fell into two divisions: (1) Universities in their relation one to another; (2) Universities in their constitutional aspect and in their relation to Teachers, Graduates and Students. The various topics discussed were, for the most part, connected with University administration. It was decided that the Agenda of the Second Congress should have relation to the chief fields of University activity, and especially to fields but recently brought into cultivation and likely, for this or for other reasons, to be viewed from diverse standpoints.

The Agenda Sub-Committee were then directed to prepare a list of persons whom it might be desirable to invite to read papers to the Congress. Their list was revised at a meeting of the Standing Committee of Vice-Chancellors and Principals on March 18th, and the invitations were then sent out.

On October 16th the Secretary received the following letter from the Vice-Chancellor of Oxford:—

> Dear Dr. Hill,—The Hebdomadal Council has asked me to issue, through you, a cordial invitation to the members

of the Congress of Universities of the British Empire to visit Oxford as the guests of the University from Tuesday, July 5th, to Friday, July 8th. We shall be very glad if you will forward information, as soon as you obtain it, concerning the numbers and names.

Yours very truly,
LEWIS R. FARNELL, D.Litt.

This invitation, transmitted immediately to all the Universities of the Empire, was accepted with the greatest satisfaction.

As in 1912, the Home Universities extended a cordial invitation to all Delegates from overseas to visit them in turn. The following itinerary was prepared :—On Saturday, June 25th, one party was to proceed, *viâ* Reading and Bristol, to Cardiff, another to Dublin and Belfast. Returning to London on June 29th, all Delegates were to be guests of the University until July 5th. (On July 5th, 6th, 7th and 8th the Congress was to meet in morning and afternoon sessions at Oxford.) On Saturday, July 9th, all Delegates from overseas were to proceed to Cambridge. During the night of July 12th one party was to proceed to Edinburgh, and another to Glasgow. The Edinburgh party was to proceed on July 14th to St. Andrews, the Glasgow party to Aberdeen. On Saturday, July 16th, Delegates, in returning south, were to have the choice of visiting Durham, Newcastle-on-Tyne or Sheffield. They were then to have the choice of proceeding on July 18th to Liverpool or to Manchester. The Liverpool party were on July 20th to proceed to Leeds, and the Manchester party to Birmingham. Owing to the meeting of the British Medical Association in Newcastle, the Armstrong College was obliged to cancel its invitation. With this exception, the programme was carried out as arranged. In January this itinerary was sent to all Universities overseas, with the request that Delegates would, without delay, inform the Bureau of their choice of the Universities which they proposed to visit. At the same time they were informed that a fund had been provided out of which, if they desired to draw upon it, their railway fares would be defrayed. The Bureau Committee has to thank the Rhodes Trustees for a grant of £250, the Carnegie Trustees for a grant of £100, the University of Aberdeen for a grant of £20, and the University of Glasgow for a grant of £25, towards the expenses of the Congress, with permission to use the money for this purpose.

At Reading the Delegates were met at the station by Principal Childs and the Registrar, and taken by char-a-banc to Wantage Hall, one of the College residential halls for men, built,

equipped and endowed by the late Lady Wantage, R.R.C. In the dining hall Principal Childs briefly reviewed the history and growth of the College since its foundation in 1892. The Delegates, after inspecting the hall, proceeded to St. Patrick's Hall for men and to St. Andrew's Hall for women. Arriving at the College, they were met by the Chairman of the Council, Mr. Alfred Palmer, and several of the Professors and Heads of Departments. They were entertained to luncheon by the Council, and the rest of the available time was spent in inspecting the various laboratories, the Zoological Museum and the British Dairy Institute.

Hospitality to the Delegates during their stay in Bristol was provided by members of the Senate and the Council of the University, and also by well-known citizens. The guests, who were met at Temple Meads Station by Sir Isambard Owen, the Vice-Chancellor, and Mr. James Rafter, Registrar, were received later on Saturday evening at Clifton Hill House by Mr. Stanley H. Badock (Treasurer of the University) and Mrs. Badock, assisted by Miss Staveley, Tutor to Women Students and Warden of the Hall of Residence for Women. No general arrangements were made for Sunday morning, but in the afternoon an excursion was made by char-a-banc to Cheddar Cliffs *viâ* Burrington Coombe. The main buildings of the University were visited on Monday morning—the departments of Anatomy, Chemistry and Physiology, together with the new buildings and "Royal Fort House," receiving special attention. The Merchant Venturers' Technical College, the home of the Faculty of Engineering, was also visited. Luncheon was taken in the University Council Room, and the Rev. Principal MacKichan, as the senior Delegate present, took the opportunity of expressing the sincere thanks of those he represented for the comprehensive arrangements which had been made to permit them to obtain a knowledge of this University. The speaker remarked that the University of Bristol was the youngest institution of its kind in this country, and, therefore, it was to them the most interesting. The great progress already achieved by Bristol excited their utmost admiration, and the auguries for the future greatness of the University were of the strongest character. Princely benefactions of buildings had already enabled it to take a leading position in various directions. He hoped that the Universities overseas would benefit from the experience of this University of the West of England, and that the relations between the Empire Universities with this country would be mutually strengthened. The guests were then conducted to the City Council House, where they were afforded an opportunity of inspecting the various objects of interest which

it contains. The party proceeded thence to the famous St. Mary Redcliffe Church, over which they were conducted by Councillor J. T. Francombe, M.A. After tea at the Royal Colonial Institute, by the kind invitation of the President, Sir Thomas Lennard, a visit to Avonmouth to view the celebrated docks concluded the day's programme. The party of Delegates left the city on Tuesday morning by char-a-banc for Weston-super-Mare, whence they crossed the Channel to Cardiff.

After their arrival by boat at Cardiff the Delegates spent a considerable time at the University College of South Wales and Monmouthshire in informal conference with their Cardiff colleagues on questions of University education. Principal A. H. Trow, in welcoming the Delegates on behalf of the College, furnished some interesting facts concerning the establishment of Intermediate and University Education in Wales. He stated that the institution of the three University Colleges of Aberystwyth, Bangor and Cardiff preceded the foundation of the University of Wales and the establishment of the Intermediate School System in Wales. The oldest of the University Colleges was that of Aberystwyth, which began its work under an old foundation in 1872. The Welsh Intermediate Education Act of 1889 gave Wales the means of establishing the Intermediate School System. The University of Wales obtained its Charter in 1893. The Principal referred to the initial difficulties which were encountered by the University Colleges owing to the low standard of students at entry, and to the dependence upon external examinations, but these difficulties, as the result of the establishment of Intermediate Schools and the University of Wales, had now practically disappeared. Special mention was made of certain features of Welsh University Education, viz., the absolute freedom from all kinds of tests, both as regards staff and students, and the absence of sexual disabilities and class distinctions. In concluding his remarks the Principal stated that the ideal of University education in Wales was to develop native talent, so far as possible, by native methods.

Professor W. J. Gruffydd, the Dean of the Faculty of Arts, dealt with two features of the College which he thought might be of interest to representatives of the new Universities, which, like the University of Wales, are seeking new lines of development and forming their own traditions. The first point mentioned by the Dean was the position of the College as a constituent part of the National University in a country which has preserved its own language and traditions, and the second point referred to was the new experiment which had been tried for the first

time during the session 1920–21, viz., the institution of a General Course. It was explained that this course counted as one course out of four in a student's first year, and involved a knowledge of ten modern books which, by their nature, were not likely to be included in the work of any particular department.

Dr. C. M. Thompson, the Professor of Chemistry in the College, gave a short account of the work in the Faculty of Science, and explained the provision made by means of post-graduate studentships and fellowships to enable students who have taken a degree to undertake work of a research character.

The Delegates also visited Llandaff Cathedral, where the Rev. Canon David Davies escorted them over the building, and gave an account of its history. In the evening the Delegates and Professors of the University College dined with the Principal at Aberdare Hall. They returned to London on the following day.

In Dublin the Delegates were the guests of the Provost of Trinity College, the President of University College, and members of their staffs. They arrived early on Sunday morning. In the afternoon they were taken to various places of interest in the neighbourhood of the city. On the following morning the library and laboratories of Trinity College were visited, and in the afternoon the National University of Ireland. In the evening they and their hosts were entertained at a banquet in the dining hall of Trinity College. On June 28th the Delegates proceeded to Belfast.

Arriving at Belfast in the forenoon, the Delegates were entertained at luncheon by the Vice-Chancellor in the Students' Union, at which representatives of the staff were present. After luncheon they were conducted round the University buildings, and were received in the library by the Librarian, Professor Gregory Smith, who took them round the new library buildings and explained the working of the library. Afterwards they were taken for a drive along the south shores of Belfast Lough. On Wednesday morning they visited the Municipal College of Technology, where they were received by Principal Stanley. They then visited the City Hall at the invitation of the Lord Mayor. After luncheon in the Reform Club, they drove along the north shores of Belfast Lough.

Sir Robert Falconer returned to Dublin on June 30th to receive the degree of LL.D., *honoris causa*, of Dublin University.

In London hospitality was offered to the Delegates from overseas by members of the staffs of the several Colleges, members of the Victoria League, and others.

All members of the Congress were invited to join in the visits

to the Schools and Colleges of the University. On the morning of June 30th the Delegates and other visitors were received at University College by the Vice-Chancellor, Sir Sydney Russell-Wells, the Provost, Sir Gregory Foster, and the Deans of Faculties of the College. The visitors assembled in the Botanical Theatre, where addresses of welcome were delivered by the Vice-Chancellor, the Provost, and Dr. G. F. Blacker, Dean of the Medical School. They were then shown over the College and Medical School. Lunch was provided for one half of the company, the other half proceeding to King's College. Lord Reay, Chairman of the College Council, who was suffering from the effects of the lesion which four weeks later caused his death, was carried into the luncheon room in his chair. In an eloquent and moving speech he offered his visitors a greeting. At King's College, as soon as the University College contingent had joined those who had been entertained to luncheon in his College, the Principal, Mr. Ernest Barker, delivered an address, after which the visitors were conducted over the Chapel, the Library and the various laboratories.

During the morning of July 1st the members of Congress, in accordance with their various interests, visited Guy's Hospital Medical School, the London (Royal Free Hospital) Medical School for Women, the Imperial College of Science and Technology, or the School of Economics.

The Drapers' Company and the authorities of the School of Economics, the Imperial College of Science and Technology, and Westminster Training College entertained parties to lunch. At the Drapers' Hall the guests were received by the Master, Mr. Edmund de Quincey Quincey, and the Wardens, the Right Hon. Sir William Grey Ellison Macartney, K.C.M.G., Mr. Robert Stansfeld Barrow, Colonel Eustace Edward Melville Lawford, and the Right Hon. Frederick Leverton Harris. After luncheon the toast of "The Universities of the Empire" was proposed by the Senior Warden (sometime Governor of Western Australia) and acknowledged by President Tory and Sir Nilratan Sircar.

In the afternoon members of the Congress visited the London Hospital Medical College, St. Bartholomew's Hospital Medical School, the East London College, the School of Oriental Studies, or Westfield College for Women. Tea was provided at St. Bartholomew's Hospital, Westfield College, and the School of Oriental Studies.

In the evening the Vice-Chancellor and Senate of the University of London and the Imperial Studies Committee held a *conversazione*. The guests were received by the Vice-Chancellor and

Lady Russell-Wells, Sir Edward Busk, Chairman of Convocation, and Viscount and Viscountess Bryce. In his address to the guests the Vice-Chancellor said that the University of London concerned itself with every branch of human knowledge that could properly be considered as a fitting subject of University teaching. It had observed the policy of the "open door," and was the first University to give degrees as such in pure science. The degrees of B.Sc. and D.Sc. were first established in the University of London, which also concerned itself greatly with medicine, in which faculty its degrees held an unrivalled reputation. It was the first academic body in the United Kingdom to admit women as candidates for degrees, and one of its great traditions all through its history had been its desire to remove all distinctions of class, sex or creed from its students. Its action in establishing external examinations for degrees had done much for this country. They hoped in the future to see grow in London the greatest University in the world ; already, in point of number of graduates, they were the greatest University in the Empire, and considerably larger than Cambridge, the next in point of numbers. They hoped graduates from the Universities of the Empire would in increasing numbers take advantage of the facilities for advanced study and research which the London University could offer them.

On July 2nd members of the Congress visited St. Thomas's Hospital Medical School and Bedford College for Women. At Bedford College the visitors were entertained to luncheon by Miss Tuke, the Principal, and the Council.

At the invitation of Sir William Beveridge, K.C.B., Director of the London School of Economics and Political Science, a party of Delegates spent the week-end at Dunford House, near Midhurst, in Sussex. This house, built by Richard Cobden about 1852, stands on the site of the farmhouse in which he was born. It was given to the School of Economics by his daughter, Mrs. Cobden Unwin, and Mr. Unwin to serve as a country house for rest, study and research, and for educational and other conferences.

On Monday, July 4th, His Majesty's Government entertained the Delegates, the Chancellors and Rectors of the Universities of the United Kingdom, and many other members of the Congress, at luncheon at the Savoy Hotel. The guests were received by the Right Hon. A. J. Balfour, O.M., Lord President of the Council, Chancellor of the Universities of Cambridge and Edinburgh, who presided over the luncheon.

In proposing the toast of "Our Guests," Mr. Balfour said : "It is nine years since the Government of the day had an opportunity of entertaining the representatives of the Universities

of the Empire from all parts of the world. In that nine years have been crowded and compressed changes the magnitude of which no man living—none even of the learned thinkers whom it is my privilege to address—can as yet estimate. Nobody can tell how great is the change which this deflection of civilized development has produced in the social elements of the world; nobody can tell whether it has hurried changes which were in any case inevitable, or whether it has modified in any profound sense the character of those changes. The work of estimating its magnitude falls, and must fall inevitably, to the historian, and to him alone. But we can see quite plainly, each one of us, within our own experience, how the world has been shaken by the vast catastrophe of the Great War, and all of us in this room, interested as we are in the progress of our Universities, know well that, among all institutions which have been thus strained, the Universities are bearing their full share. For what has happened to them? A whole generation of young men who normally would have spent their time in the most formative periods of their development in obtaining in their respective countries a University training spent those years, not in University work, but in the hard school of war, spectators of the most cruel incidents, sharers in the most overwhelming perils, and brought prematurely, so to speak, face to face not only with the realities of life, but with the realities of life in their most cruel and most calamitous aspect. The result has been, as we all know, that for years you might have walked through the quadrangles of Cambridge and Oxford—and what is true of Cambridge and Oxford is probably true of Universities all over the Empire—you might have walked through their courts and found them deserted, except for professors too old to bear arms, a certain number of women students and a certain number of men belonging to neutral nations. But as soon as the war finished a reaction began, and I believe it is a universal experience—it certainly is true of the old English and Scottish Universities with which I have any acquaintance, and I believe it to be true of all Universities all over the Empire—that, deserted as they were during the period of the war, they are now so overcrowded as to strain the endurance, the physical endurance, of the staff—so overcrowded that it is scarcely possible to find adequate laboratories and other means of education where their students can receive all the training they desire. Now, that is quite natural—quite natural that men coming back from the front, who would have taken their degree but for the war, should be added to the generation of students too young themselves to have had to join in the war, who have just reached the age when

a University training is indicated. But the curious thing is that this tide of students shows no signs, so far as I am aware, of abating—perhaps that is an over-statement—but there is no immediate indication that the Universities are at once going to return to their pre-war condition. On the contrary, so far as Cambridge is concerned—I believe it is the same elsewhere—there is an apparent indication that the desire for University education has been increased during those years of enforced absence from Universities, and that men have come back from the hardships and perils of the trenches convinced of the advantages of a University training, and recognizing that they did not fully grasp or conceive these advantages in the pre-war times; and the University training rates higher, stands at a higher level in the human estimation, now that the war is over, than it did before the war began. The full reasons for that change I do not mean to dwell upon. Indeed, to be quite frank, I am not sure that I fully understand them. That is unimportant. What is important is the fact that it is so, because it throws on the Universities of the Empire an increase to the task which, important as it was, they had undertaken when last the Government had the privilege of offering their representatives hospitality.

"To those concerned with University work, as most of you are, that is an advantage, qualified by one very grave consideration, that, while the needs of University education have increased, and show no signs of important diminution, the funds available for keeping our Universities up to the full and ever-increasing standard of modern requirements are harder and harder to obtain. I do not know how it may be in other places; I do not know how it may be in a Dominion beyond the seas, or in India; but in Great Britain, at all events, nothing can be more certain than that there never was a time when money was more required or could better be spent in improving the capacity of the teaching of our Universities, and there never was a time when money was more difficult to obtain.

"Well, the material side of your undertakings, although it never can be wholly banished from your attention, is not the cause which, in the main, has brought you from all parts of the world. You are concerned with the higher and more spiritual side of University work; and even that has become more important, and not, I think, easier, since last the Universities of the Empire assembled in London. I doubt not that the conference at Oxford which commences to-morrow will throw light upon many problems which exercise the minds of educational experts and occupy the attention of University authorities. It would be

wholly out of place to-day and here to deal with those technical subjects, even if I were competent myself to deal with them. I, therefore, purpose to say nothing more upon the various aspects of University education; but I would like to make one further observation, which would have been out of place, inappropriate, and, indeed, almost impossible, when last this assembly met here. Since then there have been associated with us in the great struggle France and America. I remember, in the very middle of the Great War, while I was Secretary for Foreign Affairs—I remember calling together a small meeting of British authorities to consider whether we could not, among these two Allied and Associated Powers, have a greater interchange of teachers and of students than we had succeeded in having before. I am not going to say a word against the German University system. It has produced results of learning too valuable to the human race to be a proper subject of scornful comment; but I do say that, on the whole, I am disposed to think, so far as my knowledge goes, the United States and the British Empire, at all events, have so much in common, not only in other respects, but in this very respect of University education—their ideals so naturally fall in the same channel, they so naturally have the same ideas, they so naturally organize themselves in the same way—that I cannot doubt that any interchange of students and teachers would be of great value to both countries. I cannot, when speaking of France, put the matter quite in the same way. France is a country which has pursued its individual course in a manner which is characteristic of France, and of France alone; and the French qualities—qualities both of French teachers and of French students—differ very profoundly from the English-speaking qualities to be found in the same classes, whether it be in the United States of America or in the British Empire. Nevertheless, and perhaps for that very reason, it is certain there is a great deal to be learned from French methods of higher University teaching. I earnestly hope that this assembly, confined as it is to the Universities of the British Empire, will consider whether it cannot join itself to—or concern itself in part with—that larger movement to which I venture to refer, and try to promote an object which only came clearly before us in the very heat and crisis of the war, and to see whether we cannot still further develop that close co-operation in matters spiritual and intellectual which, I am convinced, would bear admirable fruit, could we only bring it to perfection.

"That is the only observation of a constructive character which I propose to make. In fact, I have to do nothing more than

to take this opportunity of giving, on behalf of the Government, of which I am a member, on behalf of the Universities with which I am connected, and on behalf of all the Universities of the United Kingdom—of giving the warmest welcome to all those from overseas who have honoured us to-day with their presence. We rejoice to see them here, and we thank them for the efforts they have made to come here. We look forward to the meeting at Oxford, which is likely to be fraught with the highest results for the growing generation."

Sir Robert Falconer, K.C.M.G., President of the University of Toronto, who responded on behalf of the Delegates from overseas, including those from India, said: "In the overseas Universities the same conditions prevail as in the old country, overcrowded classrooms and laboratories and diminished exchequers. We cannot, however, fail the students or curtail the opportunities which should be offered to young men who have proved themselves so worthily in the war that has just closed. The quality of the returned men in the Dominions is such that the demand for higher education will become increasingly insistent. We must, therefore, face our difficulties and overcome them, for our peoples will not tolerate retrogression. The citizens of the United States realize what education means, and are spending money on their Universities with a lavishness which would have been regarded as fabulous a few years ago, for in their judgment the future lies with an educated democracy, and in such a democracy alone is there safety.

"We are frequently asked what is to become of the students whom we are educating? Will they not overflow the country? And will there not be a plethora of highly educated persons for whom there will be no positions available? Whatever be the state of affairs in the Old Land, there is no such danger in the newer countries of Canada and Australia. These Dominions receive every year a very large number of immigrants, and have been growing so rapidly that they will absorb all those who are receiving a University education.

"We return from the Dominions of the Empire and from India to this Congress not as mere imitators of those who have shaped our institutions at their inception. As mere imitators you would not welcome us, for our gathering would become stale, flat and unprofitable, but we bear the individuality of our own country, the quality of our own people. Many of our Universities carry the marks of the political course of our provinces, they draw large financial support from them, and are representative of their character and serve their interests. In adjusting themselves to

the emergent needs of their own localities they have learned new methods of instruction and added new departments which may seem strange to this country ; but by this adaptability the vitality of the institutions has been proved.

"Having won for ourselves our own position, and having demonstrated the vigour of the University idea in our new environment, we return to you at recurrent periods to refresh and strengthen ourselves at the sources. Here are the springs which do not fail. There have been seasons of drought in the British Universities, when they seemed to lose their power of production, but these periods were before the last quarter of the nineteenth century. Now, when we return, we find an undiminished vigour. We thank you for the young men whom you have sent and are sending to us. Without them we should have been hard put to it to carry on or to branch out. They have been living links to bind the older Universities of this land to our newer ones, and they keep them so close that the spirit of the older continues to infuse and temper the vigour of our younger, virile creations.

"Now we turn to you for still further service. Mr. Balfour has spoken of the interchange of professors and students, and it is assuredly of great importance. But from our point of view it is especially important that the British Universities should become the centres towards which our graduates should turn after they have completed their work in the Dominions. Vast changes have been brought about by the war. Memories die hard, and at least during the next generation overseas students will be reluctant to study in German Universities. Whither are they to turn ? From Canada many have gone in the past to the United States, and we are thankful for what they have done for us, and hope still to be allowed to share in their best work. But the people of the United States themselves are not contented to pursue graduate work in their own institutions alone. Ours also must turn elsewhere. Now is the supremely important time to cause the idea to spread far and wide that the Universities of Britain are the centres to which our graduates should naturally turn. And they can do so in the full faith and confidence that here, as nowhere else, they can get what they want. We know your inheritance of tradition, the accumulation of treasure in your libraries, the output of your laboratories, the skill and humanity of those who constitute the staffs of your hospitals, and the charm of your collegiate life. We know also how you received our sons during the war ; how you threw open to them, with the choicest hospitality, the best that you had. All over

Canada there are fathers and mothers who can never forget the kindness that their soldier sons received in British homes, and I am sure that similar kindness will be shown in the intellectual home of the Empire to those students, the younger brothers or sons of the soldiers, who will seek to be admitted to the privileges of the Universities of Britain. I hope that one outcome of the Congress that is about to open at Oxford will be the creation of a new psychological atmosphere, which will cause the thoughts of the Dominions and of India to turn naturally to the British Universities, and the scholars and scientists of the Homeland to expect that students will come to them from every quarter of the Commonwealth. Moreover, the vigorous youth from overseas will themselves bring gifts as they come—the energy, the enthusiasm and the originality of fresh intellectual life and strong character."

The Royal Colonial Institute had invited all members of the Congress to a reception at the Natural History Museum, Cromwell Road, to meet the Fellows of the Institute and their friends, in the evening of the same day. The guests were received by the Chairman of the Council, Sir Godfrey Lagden, and certain of the Vice-Presidents and Councillors. The string band of His Majesty's Coldstream Guards played in the Central Hall, under the direction of Lieutenant R. G. Evans, Director of Music. Miss Rosabel Watson's ladies' orchestra played in the Bird Gallery, and a concert was arranged by Mr. P. Mavon-Ibbs in the Reptile Gallery, which was attended to its full capacity.

On the morning of July 5th all members of the Congress who were in London, some 250 in number, proceeded by special train to Oxford.

At Oxford, delegates, representatives and members were entertained with the most generous hospitality. To the number of upwards of 300 they were lodged in the various Colleges or in the homes of members of the University. In estimating the attendance at the sessions of the Congress it is necessary to add to the number of those who were lodged at Oxford during the four days, as guests of the University, resident members of the University, who were at liberty to attend its meetings without enrolment as members, and members who travelled to and from London, Birmingham and elsewhere.

On the evening of Tuesday, July 5th, the Vice-Chancellor, Dr. L. R. Farnell, Rector of Exeter College, received the members of Congress and their ladies in the University Galleries. On July 6th a garden party was given in the grounds of Wadham College by permission of the Warden and Fellows.

At a Congregation held on July 7th the degree of Doctor of Civil Law, *honoris causa*, was conferred upon the Right Hon. Sir Robert Stout, K.C.M.G., LL.D., Chancellor of the University of New Zealand; Sir Robert Alexander Falconer, K.C.M.G., M.A., LL.D., D.Litt., President of the University of Toronto; the Honourable Sir Nilratan Sircar, M.A., M.D., late Vice-Chancellor of the University of Calcutta.

In presenting to the Vice-Chancellor the recipients of degrees the Public Orator said:—

"Erant qui bello factum iri crederent ut saeviente Marte doctrinae et disciplinarum ratio tota languesceret. Quod in nostris quidem juvenibus re probatum est; apud nos enim cessit armis toga academica, vacabant Musarum adyta; verum ludimagistrorum ita non cessabat opus ut nunquam alias tot pueri se docendos obtulisse viderentur. Adeo multos nostrum, quibus puerorum institutio vix inter seria prius habenda videbatur, tum demun falsae opinionis et neglectarum Pieridum poenitebat.

"Nunc clauso Jano durat idem animus, eadem voluntas. Plena videmus collegia, plena professorum auditoria; neque solitae tantum revixerunt artes, sed evolgato academiarum arcano multa ratione et doctrina posse disci in quibus usus prius atque experientia valere videbatur, alii arvorum cultu, alii machinis tractandis animos scilicet imbuunt; nihil denique est quod non discere cupiat juventus. Itaque in hac studiorum varietate iterum atque iterum exquirere nos oportet vera quae sit educationis ratio et cui viae potissimum sit insistendum, ne nova solitis aut parum aut plus justo praeponamus, ne veterum aut obliviscamur aut nimium meminerimus. Quae cum ita sint praecipuo nos gaudio afficiunt tot insignes viri huc de maximis rebus deliberatum congressi; qui cum Oxoniam velut antiquam exquirentes matrem convenerint, juvat oblatam occasionem cupidissime amplecti concesso nonnullis honore quae sit in universos benevolentia demonstrandi. Magnus ille dies et memorabilis habebitur cum Universitatibus apud Indos, apud Canadenses, ad extremos denique fines orbis terrarum natis nos quoque aliquid tribuere possumus; neque enim hodie eruditi tantum eruditos et academici academicos salutamus, neque tantum omnes Musarum sedes inter se cognatione quadam conjungi confitemur; sed his caerimoniis aliquid effectum iri speramus quo magis academiarum amicitia patriae quoque diversas imperii Britannici partes commendet.

"Itaque primum eum ad vos duco qui paene nullam reipublicae partum apud suos non tetigerit; adeo celeritas ingeni et facundia in curia et in judiciis nota est et probata; sed praecipue in rebus quae ad educationem pertinent elaboravit. Praesento vobis virum

honorabilem Robertum Stout, illustrissimi ordinis SS. Michaelis et Georgii equitem commendatorem, Doctorem utriusque juris, Novae Zelandiae Universitatis Cancellarium, ut admittatur ad gradum Doctoris in Jure Civili honoris causa.

"Duco ad vos virum eruditum, Canadensium voluntatis optimum interpretem, et quo nemo prudentius quae sint in Universitatibus studia conciliaverit inter se atque ordinaverit. Praesento vobis Robertum Alexandrum Falconer, illustrissimi ordinis SS. Michaelis et Georgii equitem commendatorem, Artium Magistrum, Doctorem utriusque juris, Doctorem in Litteris, Universitatis Torontensis Praesidentem, ut admittatur ad gradum Doctoris in Jure Civili honoris causa.

"Duco ad vos hominem in medicis studiis fovendis praecipue exercitatum; qui alia stirpe ortus ea industria atque iis artibus quas nos nostras esse cupimus ad summum locum pervenit. Praesento vobis honorabilem virum Nilratan Sircar, equitem auratum, Artium Magistrum, Medicinae Doctorem, Universitatis Calcuttensis nuper Vice Cancellarium, ut admittatur ad gradum Doctoris in Jure Civili honoris causa."

In the afternoon a garden party was given by the Council and Principal of St. Hilda's Hall.

On the evening of July 8th the Right Hon. H. A. L. Fisher, M.A., LL.D., D.Litt., M.P., President of the Board of Education, gave an address in the garden of Balliol College on "Some Recent Advances in Education." The Master of Balliol occupied the Chair.

On Saturday, July 9th, the Delegates left Oxford by an afternoon train. At Cambridge they were met by the Vice-Chancellor's representatives and conducted to their various quarters in College and in the homes of members of the University. In the evening the Vice-Chancellor, Dr. Peter Giles, held a reception at Emmanuel College, of which he is the Master. On the Sunday the Delegates attended service in King's College Chapel, and visited the Fitzwilliam Museum. On the two following mornings they were conducted in small parties over the Colleges and laboratories. On both days Mr. Bullough, the Steward, showed Gonville and Caius College; Mr. Arthur Gray, the Master of Jesus, his own College; and Dr. Parry, Vice-Master, Trinity College. Dr. T. C. Fitzpatrick, President of Queens' College, conducted the Delegates over the President's Lodge. The other Colleges and buildings of the University and town were visited under the guidance of Dr. H. P. Stokes, Honorary Fellow of Corpus Christi College. The Cavendish Laboratory was shown by Professor Sir Ernest Rutherford, who expounded to the visitors the most recent discoveries in physics, with illustrations of the apparatus

and methods used in research. The Chemical Laboratory was shown by Professor Sir William Pope, the Engineering Laboratory by Professor Inglis, the Physiological Laboratory by Dr. Shore, the Medical School by Professor Nuttall, and the Anatomy School by Professor Wilson. In the afternoon the Master and Fellows of Magdalene College gave a garden party, and the Master and Fellows of Gonville and Caius College entertained the Delegates to dinner.

On July 12th the Vice-Chancellor entertained the visitors to luncheon in Emmanuel College Hall. In the course of the speech in which he proposed the toast of "The Visitors," he said that the advantage of conferences such as they had just attended at Oxford lay not so much in the papers that were read there, but in the interchange of ideas and the comparison of experiences that were made possible. He also remarked that, in his opinion, migration of undergraduates was not desirable; but that every encouragement should be given to graduates to pursue advanced courses in the Universities which offered the best opportunities for their special work.

Sir Robert Stout, Chancellor of the University of New Zealand, responding to the toast, said that, in spite of what pessimists might say to the contrary, the traditional British spirit would overcome all their many and varied troubles. The British race had always flourished where there were difficulties to be faced, and the history of the past five years had proved this. Higher education was essential. It was the only safeguard of democracy. Without it democracy would be swayed by every passing gust of political passion.

Sir Robert Falconer, President of the University of Toronto, replying for the Canadian Delegates, said that they would take away with them unfading memories of Cambridge. The younger Universities might, perhaps, have buildings equal to those in which the Cambridge laboratories were housed, but the men who directed them—the outstanding scientists of the world, whose names were on the lips of students wherever the English language was spoken—commanded their admiration and respect. He agreed with the Vice-Chancellor that overseas students should not come to the older Universities until they had taken a degree at their home University. After this period was passed, nothing but good could come of a visit to Cambridge or Oxford. The English mind still displayed more original genius than any Continental nation, more so than France and Germany, and he appealed to Cambridge to send out her best sons to help the overseas Universities of the Empire.

At Edinburgh the Delegates, who had travelled from London by the night train, were met, early on the Wednesday morning, at the station, whence they were conveyed to the residences of their respective hosts. At 10.30 they were welcomed by members of the University Court and Senatus Academicus in the Senate Hall of the Old College, South Bridge, and were conducted over the University Library, the Old Quadrangle, the University new buildings (the Medical School of the University), the M'Ewan Hall, the Department of Agriculture and Forestry, and the University Union, where they were entertained to luncheon. In the afternoon the Delegates were conveyed in motor cars to the Royal Botanical Gardens, over which they were conducted by the Regius Keeper, Professor Sir Isaac Bayley Balfour. Thence they proceeded to the new Chemical Laboratory at Liberton, which, in the unavoidable absence of Professor Sir James Walker, was shown to them by other members of the staff of the department. The Liberton site, of 115 acres, recently purchased for the extension of the University, more particularly of the Department of Science, was then inspected. A small party accompanied Professor Baldwin Brown on a round of the more ancient parts of the Scottish capital. In the evening the Delegates, together with the other graduands who, on the morrow, were to receive Honorary Degrees, and many other distinguished guests, were entertained to dinner in the Upper Library of the Old College. In the course of the speech in which he proposed the toast of "The Honorary Graduates," Sir J. Alfred Ewing, the Vice-Chancellor, said that in addition to their other guests they had with them representatives of the great Congress held in Oxford in the preceding week, the Congress of the Universities of the Empire. The Delegates had come, most appropriately, to a University which was Imperial in its constitution, which had sent its students to every corner of the Empire, and which every year received from all corners of the Empire hundreds of candidates for graduation. They did honour gladly to Sir Nilratan Sircar, who represented that great part of the Empire, India. They were all keenly conscious of the needs for which India was crying out. They wished that, so far as they were educational, they might have the means of satisfying them on their own soil, for it seemed as if the future of India would rest on its own Universities more than on any other factor. In Sir Robert Stout they welcomed a man who, like so many other Scotsmen, went out to do the work of the world. He had made good, and he came home with so many honours that there was little they could do to add to them. They also did honour to

General Sir Arthur Currie, who came over to fight British battles in charge of the first Canadian Division in 1914, and who, when the fighting had ended in a glorious victory, had accepted the most honourable and responsible post of Principal of the McGill University of Montreal.

In responding to the toast the Bishop of Winchester referred to the death of Lord Balfour of Burleigh, Chancellor of the University of St. Andrews, whose personal friendship it had been his privilege to enjoy. He had come to know something of his value, and could truly say that there was hardly a man whom he honoured more. He had never met any man who showed more devotion to principle than characterized Lord Balfour. He was a man of open, warm and tender heart. He valued intensely such a friendship.

The Duke of Atholl and Mr. T. B. Morison, the Lord Advocate, also responded to the toast.

On the following day the degree of LL.D., *honoris causa*, was conferred upon Sir Robert Stout, Sir Nilratan Sircar, and Sir Arthur Currie. After the graduation ceremony, the Delegates attended the Commemoration Service in St. Giles's Cathedral.

The party which during the night of July 12th–13th travelled to Glasgow were received at the station by the Clerk of Senate (Professor Milligan). They drove to the residences of their respective hosts (Principal Sir Donald MacAlister, Sir William Lorimer, Professors Reid, Cloag and Scott) for breakfast. Unfortunately, a considerable additional number of guests for whom arrangements had been made were, for various reasons, amongst which the exceptional heat of the summer of 1921 must be included, prevented from making the journey. Several Delegates found the heat so trying in its effects as to compel them, much against their inclinations, to abandon the tour of the Universities at various stages. At 11.30 the party met representatives of the University Court and Senate in the Court Room, and were welcomed by the Principal. The Hunterian Museum and Library were then inspected, and various departments visited. The party were entertained to luncheon by the University in the Senate Room, and short speeches were made in reply to the toast of welcome by President Tory (Alberta), Principal Hofmeyr (Johannesburg), and Principal Hemmy (Panjab). In the afternoon the party visited the Royal Technical College, affiliated to the University, and were entertained to tea by the Governors and Dr. H. F. Stockdale, the Director. In the evening the Delegates dined privately with their respective hosts, meeting members of the University as fellow guests.

On the forenoon of Thursday, July 14th, the Delegates reassembled at the University, and were taken in groups round the departments in which they were specially interested. The University being in vacation, most of the staff were away, but those in residence accompanied the visitors and showed them the buildings and the new works in progress. At 12.30 p.m. all gathered in the Principal's house for refreshment, and were thence driven to the station, where they took the " Grampian Express " for Aberdeen.

The party of Delegates who had visited Edinburgh proceeded to Dundee on Thursday, July 14th, and were met at the Tay Bridge Station by representatives of the University Court and of University College, Dundee. Accommodation was provided for the guests of the University in the Queen's Hotel. On the morning of July 15th the party were met at University College by Dr. J. C. Irvine, the Principal of St. Andrews, and by representatives of the Faculties attached to the University College of Dundee. They were conducted over the several departments of the College. Leaving the Tay Bridge Station at 11.41 a.m., they reached St. Andrews in time for luncheon, at which the Deans of Faculties and representatives of the University Court met the guests. The afternoon was spent in visiting the University Library, Museum, United College and St. Mary's College buildings. After tea a party of the Delegates were conducted by Dr. Maitland Anderson, Librarian of the University, on a visit to the Cathedral ruins, Castle ruins and other interesting antiquities of the city of St. Andrews. On Saturday morning the Delegates returned to Edinburgh *en route* for England.

The Glasgow party, having reached Aberdeen in the afternoon, attended, in the evening, the Graduation Reception in the Mitchell Hall of Marischal College. On the following morning they were conducted over the College by Principal Sir George Adam Smith. Later in the forenoon they visited the Art Gallery under the guidance of Mr. H. Townend.

The Delegates were entertained at luncheon at the Palace Hotel by the University Court. Sir George Adam Smith proposed the toast " The Empire Delegates," some of whom, he said, were closely associated with Scotland, and even with the north-eastern district. He offered them a very cordial welcome. Principal A. S. Hemmy (Panjab), in acknowledging the welcome on behalf of the Indian Delegates, alluded to the great value, from an Empire point of view, of the attendance of students from all parts at the Universities of the United Kingdom. President H. Marshall Tory (Alberta), replying for Canada, said that their Universities were established on British lines, and from Nova Scotia to Alberta

almost every one of their Universities had Scotsmen at the head or holding important positions on the professorial staff. They were indebted for their Curries, Mackenzies, Macleans and Murrays, to Scotland, and they had the Scottish gift of drawing money out of their Government well developed. Although Alberta had only a population of 7 millions, they received a grant of £800,000 last year for capital and current expenditure, and the Universities of the other provinces received equally generous treatment. From this it would be seen that the Dominion attached the highest importance to the provision of educational facilities. Professor Paterson (South Africa), who also made acknowledgment of the welcome given them, said three things had impressed him since he came to this country. At the Oxford conference he had been struck by the remarkable ability of the women speakers. Again, from Oxford to Aberdeen, he had been impressed by the manner in which heads of Colleges and Principals retained their vitality unimpaired. Those whom he had known fully twenty years ago had lost none of their earlier vigour and intellectual brilliance. Then the atmosphere of Scotland had impressed him. When he left the south and crossed the border, he had hoped to leave the heat spell behind him, and reach a cooler and purer atmosphere, but Glasgow was worse than Oxford. He extended to the Principal and his colleagues a hearty invitation to South Africa. In acknowledging the remarks of the Delegates, Sir George Adam Smith said that Principal Hemmy and the other Delegates might be surprised that they had not more undergraduates from India and overseas States, but he wished to say—and he believed they would be in full agreement with him—that he thought undergraduates should take their ordinary degree course in the countries in which they meant to settle. On the other hand, he trusted that graduates of all their Universities would more and more come to this country for post-graduate courses.

In the afternoon, after driving to King's College and viewing other points of interest in the Old Town, they were the guests of the Principal and Lady Adam Smith at tea at Chanonry Lodge.

One party of the Delegates who had visited Scotland reached Durham about 5 o'clock on July 16th. With the exception of two of the party, who were the guests of Bishop Welldon at the Deanery, they were entertained by the President and Council of the Durham Colleges within the famous old Castle, which now forms University College.

After tea had been served, the visitors were shown round the Castle by Canon Ellershaw, the Master, who drew their attention

to some of its beauties, notably the Great Hall, the eleventh-century Norman gallery, the Tudor Tunstall gallery enclosing the famous Norman archway, the two chapels—both Norman and Early English.

Later in the evening the guests met at dinner, which was served in the Great Hall. There were present also the Dean of Durham, the Professor of Divinity, Canon Lillingston, in addition to several Professors, Heads of Houses and members of the Council, and a very pleasant time was spent afterwards in the Senior Common Room, when the various phases of University life were discussed informally, and the conversation was enlivened by many a humorous reminiscence.

On Sunday morning the Delegates attended the service in the Cathedral, and after lunch inspected the building itself under the guidance of the Senior Verger and members of the Chapter. They were taken to the famous Galilee Chapel, with the tomb of the Venerable Bede; the Nine Altars, with the burying place of St. Cuthbert; the Chapter House, decorated with the flags of the battalions of the Durham Light Infantry which fought in the Great War; the Deanery, with its great octagonal kitchen—the only one of its kind in the country which has been in continuous use since monastic times. Then the treasures of the Cathedral library were inspected—the great collection of illuminated missals and other MSS., and the Cuthbert relics. Also, during the afternoon two of the Colleges of comparatively recent foundation—St. Chad's and St. John's—were viewed.

Later in the day, through the courtesy of Mgr. Brown, the President, a visit was paid to St. Cuthbert's College, Ushaw, an institution of peculiar interest in that it is the English descendant of the sixteenth-century College at Douai. Its well-filled library, with its collection of Patristics and of mediæval MSS., its great refectory, its stately and ornate chapel, its well-planned theatre and commodious swimming bath, were all inspected and admired.

Some of the most notable books in the University library were displayed by Mr. E. V. Stocks, M.A., the Librarian, for the benefit of the guests on Monday morning, before they left for Manchester and Liverpool.

It was a matter of great regret that some Delegates who had expected to join the party were unable to be present, and, also, that the duration of the visit was so short that it did not allow full time to view all the ancient buildings of Durham and the wonderful scenery of the river banks. A general impression only of the city and its architectural treasures could be gained.

The other party of Delegates returning south from Scotland

reached Sheffield on Saturday, July 16th, and remained there until Monday as guests of Sir Henry Hadow, C.B.E., the Vice-Chancellor, and other members of the staff, and of friends of the University.

On July 18th, after they had been conducted over the College buildings, they were entertained to lunch at the Grand Hotel. In proposing the toast of "Our Visitors from Overseas" the Vice-Chancellor said they welcomed their guests as representatives of Universities which had the same interests, the same circumstances and, perhaps, some of the same difficulties as the English Universities. They really did not know what to do with the material they had at their disposal. Offices, classrooms, and laboratories were congested, and everything was overwhelming except the cash boxes. Sheffield was carrying on under the same post-war conditions as all the other English Universities. He was glad to see this great influx in the number of students, because it meant that the Universities were really fulfilling a national need. In England they believed the modern Universities served, in the first instance, a particular municipality and owed their existence to particular industries and problems, and in Sheffield they prided themselves on being a municipal University, and on terms of extreme cordiality with the surrounding districts.

He did not minimize the difficulties they had to face, but, with the goodwill, kindness and sympathy of the districts around, he felt sure they would pull through. The English Universities were not alone in this matter. Post-war conditions had affected all Universities throughout the British Empire, but he was equally optimistic in regard to them. During the six years of war the Universities had shown, all over the Empire, that they were worthy of the confidence placed in them, and he did not believe that the qualities which earned that confidence between 1914 and 1919 had in any sense deserted the Universities. They were just as ready now as then to fulfil any public function. There was not the least reason for despondency.

Mr. E. C. Barton (Queensland) said, in reply, that the money difficulty also faced them in Australia. Many of their legislators were men who had come from England with the idea of making money as quickly as possible and getting back to the Old Country. Very many had not done this, yet they still kept this mental attitude, with the result that some difficulty was experienced in obtaining the funds necessary for the Universities. He thought that they were entitled to look for a larger revenue from the hands of those whom they had equipped in a way which enabled them to secure large incomes for themselves.

Professor C. V. Raman (Calcutta) referred in particular to what he had seen in the Applied Science Department, and said Universities on the lines of Sheffield were wanted in India to enable them to tackle their own economic and industrial problems, and to qualify them to take their place in the community of nations. Knowledge and industry were not two things apart, but were very closely connected.

Speaking for the University of British Columbia and the other younger Universities in Canada, President L. S. Klinck expressed their delegates' sense of the great value of the information and inspiration they had derived from visiting the older institutions in Great Britain and learning something of their traditions. There was a prevailing opinion that Western Universities attached very little importance to tradition, but that was not true; and while the absence of tradition in some cases was beneficial, in the main it was very far from being so. The only compensation they had for the absence of tradition in the Canadian Universities was the privilege of creating traditions of their own, and their trip was proving of the greatest value in this respect. He advocated the exchange of professors and students. It was true that the distances were very great, and it meant big personal sacrifices, but it was through these channels that they would learn to understand one another and become better able to interpret one another's aims and objects. This would lead to a strengthening of the bonds of Empire.

The Delegates left Sheffield in the afternoon for Manchester and Liverpool.

A party of Delegates reached Liverpool on July 18th and remained until the following day. Arriving in the evening, they drove to the homes of their respective hosts. The next morning the Vice-Chancellor received them at the University. After he had given an account of the growth and development of the University and had shown them the main buildings, they visited the departments in which they were severally most interested, where every effort was made to give them the fullest information. In the evening they proceeded to Leeds.

Another party of Delegates reached Manchester late on the afternoon of July 18th and remained there until July 20th. Hospitality was provided at either Ashburne Hall or with private hosts. On both evenings members of the University were invited to meet the Delegates at dinner at Ashburne Hall. On the morning of July 19th they were received by the Vice-Chancellor and members of the Senate in the Council Chamber of the University. Thence, after an address of welcome, in which the

Vice-Chancellor gave some account of the history of the University, and described in general terms the scope of its work, they were conducted to the Whitworth Hall, the Christie Library, the Students' Union, the University buildings and laboratories, and the Museum. They lunched at the College of Technology with Sir Thomas Thornhill Shann, Chairman of the Manchester Education Committee, in the absence of the Lord Mayor of Manchester. After lunch the majority of the Delegates inspected the College of Technology, whilst a few paid a visit to Chetham's Hospital. The Rylands Library was also visited.

On July 20th the party which had visited Liverpool proceeded to Leeds, where they were received by Miss Marchbank, the Warden, at Lyddon Hall, one of the University halls of residence, in which they were entertained by the University during their visit. The Vice-Chancellor and Lady Sadler, Professor Smithells, Pro-Vice-Chancellor, and Mrs. Smithells were in residence at the Hall during their stay.

On Wednesday afternoon they went to the School of Medicine, which they saw under the guidance of Professor Jamieson. They were then taken by the Pro-Chancellor and the Vice-Chancellor to Adel Church, and to two of the University halls of residence, Westwood Hall and Gledhow Hall. At the latter they were received by Professor John Strong, C.B.E., Warden. They also received permission to visit the beautiful Hostel of the Resurrection, in Springfield Mount, where the students attached to the Mirfield Community of the Resurrection live whilst pursuing undergraduate studies at the University of Leeds. Thursday morning they spent in the University studying the new arrangements in the University Library under the guidance of Mr. H. Offor, the University Librarian, and in seeing some of the scientific departments of the University under the guidance of Professor Smithells. They also visited the Textile Industries Department, where they were received by Professor Barker, the Department of Leather Industries, under the guidance of Emeritus Professor H. R. Procter, and the Department of Physics, under the guidance of Professor R. Whiddington. They were also introduced to Professor Hughes, head of the Department of Law.

In the afternoon they saw St. Ann's Cathedral, the Church of St. John the Evangelist, and St. Aidan's, Roundhay Road (where are Mr. Brangwyn's mosaics), as interesting examples of church architecture in the city.

They also visited the Yorkshire Agricultural Show as guests of the Yorkshire Agricultural Society, and saw the exhibits and

the educational display of the Yorkshire Council for Agricultural Education and the University of Leeds.

The visit terminated on July 22nd.

The party which had visited Manchester proceeded to Birmingham on the morning of July 20th, and stayed there until July 22nd. The Principal, Mr. C. Grant Robertson, C.V.O., met them at the station. Hospitality was provided for the visitors by members of the Council and of the Senate, and also at the University hostel. In the afternoon they were conducted round the Corporation Art Gallery by the Curator (Sir Whitworth Wallis), and then received officially at tea in the Council House by the Lord Mayor and the Lady Mayoress. Subsequently some of them were shown the buildings of the University at Edmund Street.

Thursday, July 21st, was given to the University buildings and main departments of Science at Edgbaston. The Delegates were shown over the departments by the professors and staffs concerned, in the morning and afternoon. They were entertained at luncheon in the University Refectory, at which the Vice-Chancellor, Sir Gilbert Barling, Bart., C.B., C.B.E., F.R.C.S., presided, and brief speeches were made. The luncheon was attended by a good many members of the Senate and several members of the Council. Tea was served in the Great Hall of the University, when a good representation of the members of the non-professorial staff joined the party. The proceedings throughout were kept as informal as possible in order to give Delegates full opportunity to inspect the particular departments in which they were especially interested. In the evening the Vice-Chancellor gave a reception at his house, with music.

The Delegates expressed themselves more than satisfied with the reception and arrangements made for them, and there was, as planned, a great deal of informal discussion on many matters connected with University studies and administration. They were particularly interested in certain special developments of the University, such as the new great School of Petroleum Engineering, the new arrangement of the Department of Geology, and some of the more recent developments in the Honours Schools in the Faculty of Arts and the Faculty of Commerce.

Several Delegates expressed the view that it would be of great advantage for overseas students to come to Birmingham either for undergraduate or, above all, for post-graduate study. The Principal indicated that the University would welcome overseas students, and hoped that the Universities overseas would encourage them to come.

CONGRESS OF UNIVERSITIES OF THE EMPIRE, 1921.

CHANCELLORS OF THE UNIVERSITIES OF THE UNITED KINGDOM AND RECTORS OF THE SCOTTISH UNIVERSITIES.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G., G.C.M.G., G.C.V.O., G.M.B.E., M.C., M.Com., D.Sc., LL.D., F.R.S., Chancellor of the University of Wales.

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THE RIGHT HON. A. J. BALFOUR, O.M., Hon. LL.D., F.R.S., Chancellor of the University of Cambridge, Chancellor of the University of Edinburgh.

THE RIGHT HON. THE EARL OF DURHAM, K.G., G.C.V.O., D.C.L., Chancellor of the University of Durham.

HIS GRACE THE DUKE OF DEVONSHIRE, K.G., G.C.M.G., G.C.V.O., LL.D., Chancellor of the University of Leeds.

THE RIGHT HON. THE EARL OF DERBY, K.G., G.C.V.O., C.B., LL.D., Chancellor of the University of Liverpool.

THE RIGHT HON. THE EARL OF ROSEBERY AND MIDLOTHIAN, K.G., K.T., D.C.L., Chancellor of the University of London, Chancellor of the University of Glasgow.

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THE MOST HON. THE MARQUESS CURZON OF KEDLESTON, K.G., G.C.S.I., G.C.I.E., D.C.L., F.R.S., Chancellor of the University of Oxford.

THE MOST HON. THE MARQUESS OF CREWE, K.G., M.A., D.C.L., LL.D., Chancellor of the University of Sheffield.

HIS GRACE THE DUKE OF RICHMOND AND GORDON, K.G., G.C.V.O., C.B., Chancellor of the University of Aberdeen.

THE RIGHT HON. THE VISCOUNT COWDRAY, Rector of the University of Aberdeen.

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THE RIGHT HON. A. BONAR LAW, LL.D., Rector of the University of Glasgow, M.P.

THE RIGHT HON. THE LORD BALFOUR OF BURLEIGH, K.T., G.C.M.G., G.C.V.O., LL.D., Chancellor of the University of St. Andrews.

SIR JAMES MATTHEW BARRIE, Bart., M.A., LL.D., Rector of the University of St. Andrews.

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DELEGATES.

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J. B. BAILLIE, M.A., D.Phil., Professor of Moral Philosophy.

J. HARROWER, LL.D. (Glas.), M.A., Regius Professor of Greek, Dean of the Faculty of Arts.

GEORGE SMITH, M.A., LL.D., Member of the University Court, and Director of Studies, Aberdeen Training Centre.

ADELAIDE :

H. DARNLEY NAYLOR, M.A. (Camb.), Hughes Professor of Classics and Comparative Philology and Literature.

C. W. GOODMAN, B.C.E. (Adel.).

O. H. T. RISHBETH, M.A. (Ox.).

H. L. BROSE, former Rhodes Scholar, M.A. (Ox.).

ALBERTA :

H. MARSHALL TORY, M.A., D.Sc., LL.D. (McG.), President.

D. A. MACGIBBON, M.A. (McM.), Ph.D. (Chic.), Professor of Economics.

ALLAHABAD :

S. G. DUNN, M.A. (Ox.), Professor of English, Muir Central College.

KARAM NARAIN BAHL, D.Sc., Professor of Zoology at Muir Central College.

R. H. MOODY, M.A. (Camb. and Aber.), Professor of Mathematics at Muir Central College.

A. C. SELLS, M.A. (Ox.), Principal, Robertson College, Jubbulpore.

BELFAST :

SIR SAMUEL DILL, M.A., LL.D., Litt.D., Pro-Chancellor.

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J. SINCLAIR, D.L., Hon. Treasurer, and Senator.

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C. V. RAMAN, M.A., Hon. Professor of Physics, Sir Tarakanath Palit Professor of Physics, University of Calcutta.

BIRMINGHAM :

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F. W. BURSTALL, M.Sc., M.A. (Camb.), Professor of Mechanical Engineering.

W. F. HASLAM, M.B., Ch.B., F.R.C.S., Lecturer in Human Anatomy, Dean of the Faculty of Medicine.

E. DE SELINCOURT, M.A., D.Litt. (Ox.), Professor of English.

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PATRICK GEDDES, Professor of Economics and Sociology.

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L. SIMONS, B.Sc. (Lond.), Senior Lecturer in Physics.

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REV. A. MOFFAT, M.A., B.Sc., Professor of Physical Science at Madras Christian College.

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H. P. ARMES, B.Sc. (Leeds), Ph.D. (Stras.), Assistant Professor of Chemistry.

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A. S. WHITE, D.C.L., Judge of the Supreme Court of New Brunswick.

REV. J. LINE, M.A., B.D., Allison Professor of Systematic Theology and Economics.

MYSORE :

T. DENHAM, M.A. (Ox.), sometime Registrar of the University and Principal and Professor of History, Maharajah's College.

F. R. SELL, M.A., Professor of English at Central College, Bangalore.

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H. S. STONE, M.D., C.M. (Edin.).

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J. W. JOYNT, M.A. (Dub.), Agent in England of the University.

SIR ERNEST RUTHERFORD, M.A. (Camb.), F.R.S., Cavendish Professor of Physics in the University of Cambridge.

H. F. VON HAAST, M.A., LL.B., Member of the Senate.

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A. L. SMITH, M.A., Master of Balliol College.

REV. E. M. WALKER, M.A., Fellow and Senior Tutor, Queen' College.

PANJAB :

A. S. HEMMY, B.A., M.Sc., Principal of Government College, Lahore, and Fellow of the University.

C. C. CALEB, M.B., M.S. (Durh.), formerly Professor of Physiology at King Edward Medical College, Lahore.

PATNA :

K. S. CALDWELL, B.Sc. (Wales), Ph.D. (Leip.), M.A., Lecturer in Chemistry, 1920–21.

J. G. JENNINGS, C.I.E., M.A. (Ox.).

H. LAMBERT, M.A. (Camb.), acting Principal of Patna College.

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J. L. MORISON, M.A., D.Litt. (Glas.), Professor of History.

QUEENSLAND :

E. C. BARTON, sometime Member of Senate.

ST. ANDREWS :

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Secondary Schools Branch, Board of Education; Sir Alfred T. Davies, K.B.E., C.B., D.L., Permanent Secretary, Welsh Department, Board of Education; Sir J. Struthers, K.C.B., M.A., LL.D., Secretary to the Committee of the Council on Education in Scotland; T. P. Gill, Secretary of the Department of Agriculture and Technical Instruction, Ireland; George Fletcher, F.G.S., Assistant Secretary for Technical Instruction of the Department of Agriculture and Technical Instruction, Ireland; Sir Robert Blair, M.A., B.Sc., LL.D., Education Officer, L.C.C.; Sir William McCormick, M.A., LL.D., Member of University Grants Committee; William Bateson, M.A., D.Sc., F.R.S., Member of University Grants Committee; Sir Dugald Clerk, K.B.E., D.Sc., F.R.S., Member of University Grants Committee; Sir J. J. Dobbie, M.A., D.Sc., LL.D., F.R.S., Member of University Grants Committee; Miss S. M. Fry, Member of University Grants Committee; Sir Wilmot Herringham, K.C.M.G., C.B., M.D., Member of University Grants Committee; Major R. D. Furse, D.S.O., representing the Secretary of State for the Colonies; P. H. Dumbell, representing the Secretary of State for India; Sir Malcolm C. Seton, K.C.B., representing the Secretary of State for India; Sahibzada Aftab Ahmed Khan, Member of the Council of India, representing the Secretary of State for India; Sir Murray Hammick, K.C.S.I., C.I.E., Member of the Council of India, representing the Secretary of State for India; Colonel M. Earle, C.B., C.M.G., D.S.O., Deputy Director of Staff Duties, W.O. (Education); T. Quayle, M.A., D.Lit., one of the Joint Secretaries to the High Commissioner for India; Sir H. Frank Heath, K.C.B., Secretary to Department of Scientific and Industrial Research; Sir J. J. Thomson, O.M., M.A., D.Sc., F.R.S., Chairman of the Prime Minister's Committee on the Teaching of Science; Sir Henry Newbolt, M.A., D.Litt., Chairman of the Prime Minister's Committee on the Teaching of English; Alderman J. Houston, Vice-Chairman of the Association of Municipal Corporations; C. G. Watkins, Chairman of the Association of Directors and Secretaries for Education; F. J. Leslie, Chairman of the Association of Education Committees; Wyndham R. Dunstan, C.M.G., LL.D., F.R.S., Director of the Imperial Institute; Sir Frederic G. Kenyon, K.C.B., Litt.D., P.B.A., Director and Principal Librarian, British Museum; C. H. Wilkinson, M.A., Secretary, Oxford and Cambridge Schools Examination Board; T. G. Bedford, M.A., Secretary, Oxford and Cambridge Schools Examination Board; J. Lea, M.A., Registrar of the University Extension Board, University of London; Rev. F. E. Hutchinson, M.A., Secretary to University Extension Delegacy, Oxford; Rev. D. H. S. Cranage, M.A., Litt.D., Secretary to the University Extension Syndicate, Cambridge; E. S. Cartwright, Secretary for Tutorial Classes, Oxford; J. M. Crofts, Secretary to Joint Matriculation Board of the Northern Universities of England; Andrew Bennett, Secretary to the Scottish Universities Entrance Board; J. M. Mactavish, Secretary, Workers' Educational Association; Albert Mansbridge, M.A., Chairman of the World Association for Adult Education; Rev. Basil Yeaxlee, B.A., Secretary to the Universities Committee of the Y.M.C.A.; J. M. Mitchell, O.B.E., M.C., B.A., Secretary, Carnegie U.K. Trust; James Robb, LL.B., Secretary to the Carnegie Trust for the Universities of Scotland; Colonel Sir Edward Grigg, K.C.V.O., D.S.O., Secretary to the Rhodes Trust; F. J. Wylie, M.A., Oxford, Secretary to the Rhodes Trust; Prof. C. S. Sherrington, M.A., M.D., President of the Royal Society; Sir Godfrey Y. Lagden, K.C.M.G., Chairman, Royal Colonial Institute; Sir Harry F. Wilson, K.C.M.G., K.B.E., Secretary, Royal Colonial Institute; The Right Hon. Lord Gorell, C.B.E., M.A., Chairman of the Imperial Education Committee, A. P. Newton, B.Sc., D.Lit., Rhodes Professor of Imperial History; Rev. A. A. David, D.D., Chairman, Head Masters' Conference; J. Talbot, T.D., D.L., M.A., B.Sc., Chairman, Incorporated Association of Head Masters; A. Blades, B.A., Chairman, Incorporated Association of Assistant Masters; Miss Major, M.A., President, Association of Head Mistresses; Miss Dorothy Shove, President, Incorporated Association of Assistant Mistresses; Rev. E. G. Wainwright, M.A., Chairman of the Council of Principals of Training Colleges; M. J. Rendall, M.A., Chairman of Council of the League of Empire; The Dowager Countess of Jersey, C.B.E., President of the Victoria League; Major Fred. J. Ney, M.C., General Secretary, National Council of Education,

Canada; Dr. S. P. Capen, Director, American Council on Education; Nicholas Murray Butler, Ph.D., Jur.D., LL.D., D.Litt., President of Columbia University, representing the Institute of International Education; The Right Hon. Sir Frederick D. Lugard, G.C.M.G., C.B., D.S.O., Member of Bureau Committee; G. MacLean, Ph.D., Director of the American University Union in London; Prof. G. Rudler, M.A., Dr. ès L., President of the London Branch of the Office National des Universités et Ecoles Françaises; J. H. Helweg, Cand. Mag., Director of the Anglo-Danish Bureau in London of the Danish Students' International Committee; Prof. Winifred C. Cullis, O.B.E., D.Sc., Member of the Interchange Committee of the Universities Bureau; Prof. Caroline F. E. Spurgeon, Litt.D., Dod. l'Univ., Paris, Member of the Interchange Committee of the Universities Bureau.

Prof. J. Adams, B.Sc., LL.D.; Prof. Alex. Darroch, M.A.; J. C. M. Garnett, C.B.E., M.A.; Miss Lynda Grier; Prof. G. H. Leonard, M.A.; Cyril Norwood, M.A., D.Lit.; Prof. W. W. Watts, Sc.D., LL.D., F.R.S.; Prof. A. N. Whitehead, Sc.D., F.R.S., who, not being delegates or representatives, have accepted an invitation from the Organizing Committee to read Papers to the Congress.

ASSOCIATE MEMBERS.

J. Burgon Bickersteth, M.A.; S. Brodetsky, M.A., Ph.D.; Prof. H. L. Bruce; Prof. C. K. Chase; Mrs. Clark; A. V. Conway Davies, M.A.,; E. Deller, LL.D.; T. Ekambaram, M.A.; W. A. Bulkeley Evans, M.A.; Miss Mary Gordon, D.Litt.; J. N. Gupta; T. Ll. Humberstone, B.Sc.; I. L. Kandel, M.A., Ph.D.; C. M. MacInnes, B.A.; H. Munch-Petersen, D.L.; Miss Eva Rayson, B.A.; Ramchandra Rao; Mrs. Thomson; N. A. Thoothi, B.A.; Miss Waddington, Ph.D.; H. P. Waran; Miss K. M. Warren; Miss M. Wrong.

Resident Members of the University of Oxford attended the Congress without enrolment.

REPORT OF PROCEEDINGS.

TUESDAY, JULY 5.—Morning Session.

CHAIRMAN:

THE MOST HON. THE MARQUESS CURZON OF KEDLESTON, K.G., G.C.S.I., G.C.I.E., D.C.L., F.R.S., CHANCELLOR OF THE UNIVERSITY OF OXFORD.

"The Universities and the Balance of Studies."

I.

THE PLACE OF THE HUMANITIES IN THE EDUCATION OF MEN OF SCIENCE AND MEN OF AFFAIRS.

II.

THE PLACE OF THE PHYSICAL AND NATURAL SCIENCES IN GENERAL EDUCATION.

III.

THE QUESTION OF SPECIALISM IN UNIVERSITY CURRICULA.

First Session.

The Chairman: Ladies and Gentlemen; it is nine years since the last meeting of the Congress of the Universities of the Empire was held in London; and it is with great pleasure as well as in a spirit of satisfaction at much good work already accomplished and of high and sanguine hopes for the future that, as Chancellor of this University, I welcome you at Oxford to-day. Of the Chancellors who addressed you in July, 1912, one, Lord Rosebery, who opened the proceedings on the first day, is now prevented by ill health from filling his once pre-eminent part in our public life. Two others, Lord Rayleigh and Lord Strathcona, have passed away. The remaining two, Mr. Balfour and myself, now soldiers of the Old Guard, are at our posts to-day, and, speaking as we do for the two parent Universities of the Empire, we unite in assuring you that you will meet in these ancient foundations with as warm an interest in the rich and splendid University growth that is springing up all over the world and has in many cases attained to so powerful and vigorous a manhood, and with as quick a response to the new voice that is calling aloud in every land, as you will find in the most democratic of countries or in the most modern of institutions.

In 1912 fifty-three Universities were represented at this Congress. To-day, in spite of the hiatus caused by the war, the number is fifty-nine; and I should not be surprised if in the next half century it is nearly doubled. Nothing is more characteristic of the new spirit to which I have referred than the almost passionate desire of countries, provinces, communities, cities, races, creeds, to possess Universities of their own, appealing to civic or national or sometimes religious patriotism, and satisfying local or professional or sectional needs. Universities are indeed fast becoming universal. The rapid increase in their number, and in that of their affiliated colleges and institutions, represents a great awakening of public spirit, and, if properly guided and co-ordinated, should lead to a powerful strengthening of the intellectual sense and the spiritual fellowship of mankind.

It is to assist and expedite that process that these conferences are held from time to time, and grave would be our disappointment if each, as it comes, did not register a definite and demonstrable advance.

I said, ladies and gentlemen, that great events have happened since our last meeting. The greatest of these was the war; and, shattering and melancholy as have been the results of that convulsion in many spheres of public and political interest, I do not

think it can be doubted that it produced and has been followed by an intellectual upheaval which will in time come to be regarded as its chief consequence, perhaps its main justification. The world-mind is no longer content to be iron-bound by old traditions; it seeks fiercely for new outlets and a fresh expression; and it is finding them in the pursuit of knowledge and in the eager training of the intellectual faculties of man.

Upon no part of the world has this revelation struck with more vibrant force than upon the British Empire, and none of our institutions has it more profoundly affected than the older Universities. Vanished is the idea that sometimes found expression in pre-war days that Oxford and Cambridge, for instance, though making a substantial contribution to the government, the character and the healthy manhood of the nation, were yet, as instruments of intellectual progress or national efficiency, negligible factors, picturesque survivals, content to doze peacefully by their tranquil streams. Even then it was a travesty of the real position. Long before 1914 this venerable fallacy had been exploded. The Rhodes Scholars had already brought to Oxford a refreshing stream of youthful energy and intelligence from the Dominions and from America. Oxford was already catering for a wider class than the Church, the professions, the squirearchy, and the Houses of Parliament. Students, administrators and teachers came here from distant lands to see what we were doing. Oxford was already becoming a clearing house of intellectual and educational ideas. Inside the United Kingdom Oxford teachers and lecturers were carrying University education far and wide to the populous cities and industrial centres of every part of the kingdom. The tranquil stream was moving with an accelerated and at times even a turbulent current. With a prescience not everywhere sufficiently acknowledged, Lord Haldane had already created a link between the Universities and the Army.

Then there burst upon us the thunderclap of war. The University was emptied of its youth, pouring out to the front. The number of undergraduates fell from 3,000 to 300. It was even contemplated to close the University. But better counsels prevailed. It was realized almost in a flash that Oxford with its traditions, its buildings, its teaching staff—in so far as this had not been depleted—the magic of its inspiration, provided an invaluable scene for a new and patriotic experiment. The University became a great *quasi*-military camp: a training establishment for the various war services, as well as a hospital for the wounded, sprang up in our midst: 2,500 young men lived in our Colleges and passed through the Schools of Instruction on

their way to officer the armies in the field. The pens of our writers were engaged in informing the public mind, which they did with a literary vigour at once powerful and refreshing. The brains of our men of science, in their studies and laboratories, were directed to researches and discoveries that had a material effect upon the conduct of the war. Can it be imagined that four years of this experience did not leave an enduring impression both upon the life of the University and upon the mind of the State ? The Government realized that here—and, of course, I do not speak of Oxford alone, because the same thing was true of other Universities as well—was an invaluable reservoir of physical and intellectual force, a great agency in the future development of the life of the nation. The men themselves, who had passed through their training here, absorbed the spirit and ideals of the place, and either carried their affection for it, when they emerged unscathed, to their homes in distant lands, or returned here to complete their courses when the war was over. The University itself instinctively realized its own enhanced responsibility. It became inspired with a noble ardour, and without losing the capacity for enjoyment or its love of sport—which I believe was rarely more conspicuous than at the present moment—it has never shown a better record of serious work accomplished than in the two and a half years since the conclusion of the war.

Within the same period we have abolished compulsory Greek and have admitted women to full membership of the University —a reform in which I may remind you that Cambridge still lags behind. We have somewhat timidly admitted the principle of State aid. Students from the Dominion Universities are already coming in ; arrangements have been made by which they can take their degrees in two years instead of three. Two hundred and sixty Rhodes Scholars from the Dominions and America and India are now in residence. The total number of undergraduates, some 3,000 before the war, is now 4,500. Are not these evidences of a replenished vitality and a definite purpose ?

And now, ladies and gentlemen, upon this scene of so much activity and such fair promise descends this Congress of our fellow workers from other parts of the United Kingdom and from across the seas. I can only speak for my own University, but the representatives of other Universities can, and I am confident will, tell a similar tale for theirs—a tale not merely of great deeds accomplished, but of new avenues to be explored and of fresh triumphs to be won. The war has also affected the organization of this Congress. It prevented the first quinquennial meeting from being held, as had been contemplated, in 1917, and post-

poned it to the present occasion. It has also arrested your activities in other particulars. But, nevertheless, no one who reads the record of what has been done since 1912 can deny that most substantial progress has been made.

The Universities Bureau, which was then established, has proved to be of high value. The *Yearbook* which it undertook to publish, and of which three editions appeared during the war, has assumed the practical and highly useful form of the latest publication brought out in 1920—I hear there is a new one since then ; I am myself out-of-date ! During the war the Bureau did excellent work in the translation and circulation of relevant literature. In 1919 the Government, recognizing the valuable work of the Bureau, gave a grant of £5,000 to assist you in obtaining suitable premises, and the Universities of the United Kingdom have followed up this generosity by the promise of annual contributions. The Bureau has arranged for the visits of University delegations to foreign countries ; and now it is taking in hand those great and important services which will be its main object, viz., the collection and distribution of information that will facilitate the interchange of teachers and professors, the exchange of visits of scholars and lecturers, and opportunities for students of outside or foreign Universities to complete their course in English Universities, and *vice versa*. I shall not enlarge either upon the importance or the difficulties of this programme. It will doubtless form the subject of discussion at one or other of your meetings. I do feel, however, that by its success in these respects will the Bureau and the Congress that initiated it to a large extent be judged. There is a tide running which we cannot afford to lose. The war, which has removed from our path the spectre of German militarism, has also removed, for the time being at any rate, the competition of German Universities. A rare opportunity is provided for Britain to come forward and take the vacant place, becoming the recognized Mecca of the educational world. With the new spirit that is moving the souls of men, with the enhanced sense of unity and co-operation that imbues the minds of all those who were so recently fighting together and risking everything in the common cause, and with a conviction of the tremendous urgency of the task, it is our duty to address ourselves to it without delay.

My work happens to lie for the most part in other channels. I am one of those who are unhappily engaged in the endeavour to find political solutions for largely insoluble problems. Treaties, frontiers, commissions, covenants, stipulations are the pieces that I see moved, not without much trepidation and anxiety,

on the international chess-board from day to day. But, amid the difficulty of some of these projects and the futility of others, the conviction grows upon me that it is not so much on paper conventions or signed documents or even on political combinations that the peace of the world will depend, as it is upon the growing commerce of knowledge and ideas, the freemasonry of intellectual ideals, the drawing together of the minds and consciences of educated and thoughtful men. This is easier among those who speak the same language and are to a large extent familiar with the same conceptions. I feel, therefore, that this Association has it in its power to play a very important part in developing the organization and drawing closer the bonds of the British Empire.

But I feel also that it may aspire to a wider and more cosmopolitan range of influence, and that as it draws within its orbit the educated intelligence of other countries, and notably of America, it may exercise an appreciable influence on the peace of the world. In the words of your Canadian poet, cannot we all join together in " making the golden journey to Samarkand " ?

If I am justified, ladies and gentlemen, in cherishing these hopes and if they are capable of realization in no dim and distant future, then I cannot be wrong if, in opening the proceedings of this Congress, I venture to invoke the blessing of Providence upon your labours.

THE UNIVERSITIES AND THE BALANCE OF STUDIES.

The Place of the Humanities in the Education of Men of Science and Men of Affairs.

First Paper.

The Present and the Future of Hellenism.

It was a crisis in the spiritual history of Oxford when Greek learning first made entrance here; it is appropriate, therefore, that here in this hall a voice should be raised in its behalf in a new crisis which threatens its gradual decay. We are aware that its old domination has gone—we dare hardly hope that it will return—and that the number of its students both here and elsewhere is steadily diminishing.

The new Universities all recognize the subject, but for one student who turns to Greek a hundred turn to chemistry. At meetings of the Hellenic Society and Classical Association the most fervent devotion to Hellenic culture is proclaimed, and journalists offer not infrequent lip-service to "the glory that was Greece," while many voices attest the urgent necessity of impregnating modern society with a strain of the Hellenic spirit or of bringing the wonder-working achievements of Hellas within the cognizance and appreciation of the masses of our people. Hellenists and others may agree that this object is desirable, even vital to the preservation of a higher civilization, and that Greek should not be allowed to become a mere specialism, the furtive joy of a few votaries in a cloister. But there is no salvation in words or in dreams. The anxious question is: Are we taking any action that might bring us any nearer to the realization of this aim? I cannot say that we are, unless the occasional performance of a Greek play in an English translation can be called action. Meantime, the evidence of the decline of classical studies increases alarmingly. Even in the older Public Schools, where classic culture was the sole tradition of the past, the desertion of Greek has been extraordinarily swift. It is not yet certain whether Bradfield College will be able to maintain the renown of its Greek theatre, or whether even in Oxford, the last stronghold of Hellenism, the University Dramatic Society will long retain its capacity to produce a Greek play in the original language. A large part of the educational system of the civilized nations is now ignoring not only Greek but even Latin; and though this latter is safe for the present in England, we are asked in Oxford to admit Rhodes Scholars from many American Univer-

sities, who have never studied Latin, but are regarded as of the best type that those Universities can produce. We are confronted, then, with the fact that many of the leading educational centres in the Anglo-Saxon world, not to speak of other areas, are turning their backs on the older traditions of European culture and refusing to be interested in its origins. We should note and ponder on the effects of this. We see its effects in what we may call ephemeralism ; in Transatlantic curricula, which some would imitate here, devoted to the study of the present and disjoined from any far-reaching links with the past. It may justify itself by appraising " the virgin soil of the mind," by proclaiming that " the world is weary of the past." But we know that even the rawest mind is by no means virgin soil, and that the endeavour to obliterate the past means intellectual Bolshevism. Here we cherish, and shall continue to cherish, the principle that it is part of the ideal of a University to preserve the spiritual sense of the continuity of the ages, to establish the fellowship of past and present, so that the origins of our culture may be revealed and a standard be maintained for adjudging the masterworks of the human mind. And this determines our view in regard to Hellenism. We need not repeat the exaggeration that there is nothing that is not Greek in its origin ; but we know that Hellas was the main fountain-head of our literature, our art, our philosophy and science, and of much of our polity and much of our religion. It may be that a knowledge of Hellenic history and political philosophy may help us in our social problems. But it is certain that our imagination of the soul of humanity is blurred and incomplete unless by some means we have attained knowledge of the rich and various manifestations of the soul of Hellas.

Our past system of classical education has resulted in a failure to secure the heritage that we hoped for. If we are to cherish and maintain this light, without which we believe that our culture will wither at the root, three aims must be set before us, involving change of method and outlook : (*a*) We must train our professional Hellenic scholars, those who are to be our highest teachers of Hellenism in the leading Universities, on new lines. (*b*) We must endeavour to connect the highest teaching of what are called Modern Subjects, especially, Modern History, English and modern foreign Literatures with some study of Greek and the Greek sources. (*c*) We must improve the training, increase the number, and quicken the ardour of those who may serve as missionaries to reveal the Hellenic spirit and plant some seeds of Hellenic life among the masses of our industrial centres.

I wish to deal briefly with each of these points. For reasons

that have a long causation behind them, the training of our scholars both in public schools and colleges, has been for some centuries too linguistic, grammatical and rhetorical, stricken with formalism and pedantry. Most of us scholars have been bred under this system in our youth, and its products are still discernible in our midst. It has given us what is called "formal scholarship," a familiar friend, who is obviously dying and whose funeral I shall be glad to attend. It has given us false idols, and the narrow spirit of a mutually admiring coterie, that wrote Latin and Greek verses to each other and to no one else. It has engendered a wild form of pedantry that regarded a false concord or false quantity in Greek, not at all as we should regard a similar mistake in French, but as a shock to the higher order of things, which deserved scorn and reprobation when committed by a man, cruel punishment when committed by a boy. We can now understand the psychic causes that fostered these morbid growths. We discern the psychology of barbarians standing spell-bound before the marvellous works of Greece. And till quite recent times there has remained something magical in our view of things Greek, and in our attitude there has lingered something of the naive barbarian. But our own achievements allow us at last to view the works of Greece with sanity and a sense of proportion, and we deal no more in magic. The old formal scholarship was almost useless as an interpretation of Greece, because it was ignorant of so many of the things that Greece means for us, ignorant of its art, its monuments, its religion and, strange to say, of much of its literature; for it concentrated itself and its pupils on a few masterpieces that it desired to imitate; and it feared that too much reading of Homer or Pindar might corrupt the pure attic style of the pupil. We may be grateful that there have always been great men among us, luminaries of high Hellenic scholarship, who were too strong for this bondage, Buchanan, Bentley, Porson, Monro, Bywater. But Buchanan was lured by the coterie-art of Latin verse-writing and missed the position for which he was destined, that of the first great national poet of Scotland. And each of our other great Hellenists of the past, brilliant and original as was often their achievement in the literary sphere, reveals at certain points of his work those defects that are inevitable if one's studies are confined merely to the literature of Greece. The point that I wish to emphasize as the point of departure for our reform is that it is impossible to interpret the soul of Hellas merely by its literature. Man, in general, has other means of revealing his soul. The pencil and the brush, the chisel, the engraving-tool, the tuned string have been often as

efficient instruments of his self-revelation as the pen. Of other nations this is true. But no nation ever put so much of its best and highest self into its art as the Greek, and this without any æsthetic self-consciousness, but by some elemental law of its nature. Also its art is of unquestioned supremacy in the world; and though its greatest master-works and colossal monuments have mainly perished, the equally marvellous products of its smaller art have come down to us in rich abundance, and our store is yearly increasing. To enjoy all this, to enter into warm communion with that ancient creative spirit by these vehicles, we are not obliged to traverse that dusty and laborious and, to so many, depressing road of the grammarian, whereby those who can struggle on to the goal are at last rewarded with the full enjoyment of Homer and Aeschylus. It is true that mastership in Hellenic archæology as in Hellenic philology demands long study and thought. But the general appreciation of Greek art, whereby one may attain a revelation of the Greek soul no less deep and fascinating than that given by its literature, makes less demand on intellect than on feeling and imagination. It needs the awakened and familiarized eye, and quickens faculties that have long been atrophied and moods of the spirit that have long been dormant in our race. The first and chief reward that Greek archæology bestows on its votaries is a new joy and delight; and the sense of delight has its educational value. The classical scholar who has had the double training in full measure can feel equal delight in a Greek coin or gem and in a lyric ode of Pindar or Sophokles; he recognizes in both an equal and kindred genius or spirit-power. And the contemplation of Greek monuments can awaken this joy more swiftly than the study of Greek literature, for there it comes only after years of grammatical travail and only a few win through to attain it. Keats never came or could come into direct contact with Greek literature, but he came into direct contact with the Elgin marbles, and one of his greatest odes expresses what that strange experience of a new spirit-world signified for him. A striking passage in the Greville Memoirs shows how even London Society was thrilled and uplifted with a new mental experience when those masterpieces were first revealed to it. And those who were once privileged to see the veil withdrawn from the sarcophagi of Sidon in Constantinople when the original colours were still fresh on those marvellous reliefs may have felt something of the rapture of Cortes in Keats' ode, "Silent, upon a peak of Darien": such a revelation, undreamed of before of the power of sculpture, was there.

And apart from the new source of high and pure enjoyment

that it unlocks, the study of the monuments of Greek art is necessary to the fully-trained student and interpreter of general Greek literature and history. I need not speak here of epigraphy, for though that department is generally supposed to belong to the domain of archæology, it obviously belongs as much to philology as manuscripts belong. It is more to the point to observe that no Greek historian is fully equipped who is not versed in Greek numismatics. As regards the higher literature of Greece, this is so deeply infused with the mythology and religion, that, without an adequate knowledge of these two latter manifestations of the Greek spirit, no one can be a sure interpreter of the former. Also, the monuments of Greek art are our most vivid evidence of Greek religion and of the mythologic imagination of the people. And without some intimate acquaintance with these subjects no one can fully understand, still less comment on, a Greek play or an ode of Pindar.

But, it may be thought, I am preaching to the converted. We all recognize the importance of archæology. If we do, we do not act on the recognition. Our education, even of those who are to teach Greek scholarship to others, is still one-sided. We look at the ancient world with one eye only; and call a scholar who has been trained in the various branches of archæology as well as in philology a specialist; the word is not always intended as a compliment, and in any case is more applicable to the older and narrower type of scholar. In the classical curriculum of our Universities such subjects as Greek art, numismatics, religion, are allowed, if at all, as special subjects only. Throughout the last forty years, a few enthusiasts have been trying to remedy this, but while our wealth in Greek monuments has increased, the number of those who can expound and interpret them, and of those who might be fitted to succeed to our few archæological chairs, remains perilously small. We need a new lift in our classical training; and we shall never set free the full life-force that lies buried in ancient Greece until our classical teachers are trained, not only in its books, but in its monuments, and until their teaching has been able to quicken in the average man of classical culture not only the logical intellect, but the seeing and imagining eye.

What, then, does this new training promise beyond what the old could achieve?

First, as I have said, an increase of high and pure delight; not to be belittled as "æsthetic" indulgence, but to be prized as a rare gift of God: secondly, a widening of the whole mental horizon in respect of the world-work of Hellas. Too many of our classical students, under the present system, are left with the

impression that in the world of spiritual creation there was little that mattered outside Athens or after Demosthenes, for even in their curriculum of books Pindar is rarely read. But we would train our average student so that he is made aware that the same genius which flamed so brightly for an astonishing period at Athens was potent also at Tanagra, at Sikyon and Argos, Elis, Syracuse, Terina, Rhodes and Pergamon, and in many a Greek city from which no books have come down to us. Hereby he will gain a deeper and more vivid impression of the vitality of the Greek soul through many centuries and in many regions. A man so trained, if he becomes an administrator in a distant part of our Empire, among peoples of ancient culture, will have a sense that is lacking in so many of our officials of the foreign service, and lacking with results often so disastrous, a sense of respect for the monuments of their past life, and he will cherish and respect these as part of the soul-heritage of the people. And a teacher with this double training, if he takes a classical post in a new University in one of the great industrial cities, can play a stronger part as a missionary of Hellenism, for he will have a surer and swifter mode of interpreting to the masses the creative genius of Hellas. A scholar-friend of mine, a distinguished product of our older system, told me of his embarrassment and regret when the generous municipality of one of these cities had enriched its art-museum with the casts of the Elgin marbles, and when the intelligent public, being struck with these things that seemed to have some meaning and message alien to their experience yet appealing to them, asked him as classical lecturer to explain them; for he had to confess that he knew nothing about them; nor could any one in his University expound them or interpret their secret.

"The hungry sheep look up and are not fed."

Yet he had read most of the classics and written many Greek verses. He missed here a great opportunity. It is not possible, save by long and arduous training, too long and too arduous for the intelligent man of the working-class, to bring him into direct and magnetic contact with Homer and Aeschylus; no translations of such poetry are of any avail, but only that mastery of the subtle Hellenic speech that is the happy fruit of years of study. But the great monuments of Greek art can convey much of their message to an intelligent man of average imagination and perception after a few weeks of skilful guidance and direct contact, however defective has been his past education. Therefore, Greek monuments offer more promise than Greek literature to our hope

and our purpose of instilling into our modern world and our city population something of the spirit of Hellenism and some cognition of its achievement.

Two objections to this urgent reform may be raised. "The man who is aiming at scholarship as a profession has no time for the double training: it is sufficient task for a lifetime to read the classics, as he must." My own experience enables me to deny this with full assurance. Given health, will-power, and means, a man can in ten years of his mature life have read the whole of Greek literature and visited most of the sites and museums where Greek monuments are to be found and have gathered from them what he needs. Ten years' apprenticeship is not too much for a high and great career. After this he will need to specialize on some branch in one direction or another, and his special work will be the deeper and the surer because of his double training.

Another objection is that the ordinary student who, as they say, is going out into the world and who pursues the classics for purposes of general culture may have no taste, and, as our curriculum is at present prescribed, has no time for archæology. The taste indeed may be atrophied within him, as it was in most of our distinguished scholars of the former * and as it is in many of the present generation, atrophied through a few centuries of ancestral apathy and a false intellectualism. But the seeds are there in our race, and may easily be quickened and grow. The old public-school spirit, so antipathetic to them, is only a passing phase. The question of time is certainly serious, for there is little indication as yet that our new generation of students will work harder than our old, as they easily might. But we can find time by lightening our classical curriculum with great advantage to itself. For our ordinary student we can jettison much of the reading of the classical orators, those who spell-bound and deceived our fathers, at least, those parts of them that are neither literature, truth, nor history. We could save much of the time spent on compositions. Above all, as our most serious and vitalising reform, we should abolish verse-making as part of our general classical culture; and this change alone would give the student a greater chance of reaching the products of true Hellenism, and would go far to save the whole sphere of classical education from the

* The writer of this paper heard some forty years ago a dear friend of his, who was a very eminent Latin Professor, remark that he could not understand a man looking at a monument when he might be reading a book: he remembers also that at the opening of our present Ashmolean Museum a well-known Professor of Greek was reported to have said with a self-protecting smile, "They dangle these things before our eyes."

reproach that attaches to a dead mystery. It would be a lighter matter to save a misspent month or two in the lives of our students by abandoning the farce of teaching, or trying to teach, Greek accents, so long as they are not allowed to be used for the pronunciation of Greek and are only proofs of our pedantry and our bondage to magic signs.

I am only suggesting such time-saving reforms which could not injure the study of true Hellenism; I would not think of suggesting that we should abandon anything proved good or beautiful. And these reforms might easily gain for the time-table of our curriculum a clear year, which would be enough for the wider training proposed for our students.

Hitherto, I have been dealing with the Hellenic curriculum alone, and have advocated changes in it which it is in our own power to carry out, if we put off the fetters of tradition, and which might revivify the study. But there are other changes affecting other curricula that I venture to urge, but which are far more difficult to accomplish in our modern Universities. If accomplished, they would secure and establish in its rightful place the study of Hellenism and would be of inestimable benefit to the other curricula. I refer to the courses in modern languages, English and foreign, now established in nearly all our Universities. These are humanistic courses of great value, dealing with high literatures and offering to many students who might otherwise have been content with the intellectual level of the passman a more stimulating and more ambitious intellectual career. I am glad that these new literary studies have taken root and are attracting many votaries. But here at least in Oxford, where the highest and severest ideal should be set, their roots do not go deep enough; and I fear their cultivation in other Universities is no less shallow. We do not compel, we do not even allow, the students to go back to the fountain-head of Greece and Rome; in our statutes dealing with the English, French, Italian, Spanish schools, there is no mention of any Greek or Latin author, no opening given, even in the list of special subjects which the more advanced pupils might take, to any portion of Greek and Latin literature to be studied in connexion with those later authors who were nourished on it. We were blind when we made those statutes. Who would dare to pretend to be an authoritative critic of Dante who could not read Vergil, of Corneille and Racine who knew nothing of Attic tragedy, of Molière who was ignorant of Terence? Even of Shakespeare the deepest appreciation belongs to those who can thoughtfully compare his Macbeth with the Agamemnon of Aeschylus. Nor can any final judgment be

passed on the worst of his great plays, *Troilus and Cressida*, until we can trace the story through the sequence of the ages back to Homer. We never have produced a single great critic of our own literature, and we never shall, who was not deeply versed in the literature of Greece and Rome, and surely the same must be true of French, Italian and Spanish studies. No doubt all these may be studied up to a certain point with profit and pleasure, divorced from the study of their origins and without scaling to their fountain head; but they cannot so be studied with mastery nor with authority.

I do not, then, venture to propose that a knowledge of Greek and Latin be imposed as a necessary condition upon all students in the University Honours Courses in Modern Languages; this would at once deprive us of hundreds of creditable students of both sexes, who are gaining intellectual enlightenment and literary cultivation from these courses. But I would only award a first-class to those who took a Greek or Latin subject in connexion with one or more of their later authors, and proved that they were capable of tracing the literature of Europe back to its fountain-head. For they alone among the students of modern languages would have a right to the prestige of a First Class; they alone can become first-class critics, and our strongest champions against ephemeralism. If this change were made, then the boys who were being trained for University scholarships in modern languages would have to maintain their classical culture if they were ambitious of the highest honours. I believe that an analogous change would be beneficial in our Modern History School, which has been guilty of the same unnatural break with the past. If all the other Universities refused, I should still rejoice to see my own University daring to do this. For we should then be fulfilling our mission and maintaining our ideal, and an Oxford First Class in these modern subjects would have a higher meaning and value than elsewhere; and we should preserve the spiritual link that attaches us to Mediterranean culture.

L. R. FARNELL.

THE UNIVERSITIES AND THE BALANCE OF STUDIES.

Second Paper.

Old Wine in New Bottles.

Our New World often forgets its origin. When we speak of our achievements usually we leave out of account the fact that our fathers came from Europe and that the process of immigration is still going on. But it is misleading to call our European relatives old, for the unearthing of Assyria and Egypt brings Greece into the modern world, and as between Europe and America it is simply a case of new and newer. On this side of the sea we are experimenting with modern ideas and institutions which have been transmitted to us; of original spiritual conceptions and forces we have created but few. Indeed we often ask, not without concern, whether the regulative factors of Western civilization have deteriorated in the transfer, and institutions have lost vitality in undergoing adaptation. When prophecy, working on the rapid expansion of the University, speaks confidently of what it is to do for democracy, our flow of emotion may be arrested for the moment by a wonder whether the academic ideal has been kept as pure as it is in its first home; whether buildings, and departments and energy, are producing as good results here as in Europe. The magnificent Universities of this continent, private and public, are indeed a visible tribute to the idealism of the people, and to their faith in higher education. Splendid as has been the response of the wealthy to the appeals from Harvard, Yale, and Chicago, there is even greater significance in the steady rise of popular support in behalf of the State Universities from the Middle West to the Pacific Coast. Has democracy ever shown itself to better advantage than in the readiness with which States, such as Michigan, Illinois, Wisconsin, and California, make grants, running from three to five million dollars annually, for the maintenance of their Universities? Here is abundance of enthusiasm for the University. But has the essence of its spirit retained its power in these newer developments? This is a question which we may well put to ourselves.

The College as it was first planted in America came from England, Cambridge being its original home. But many contributory influences have gone to make the University as it is to-day

in the United States; not the least effective of which have issued from Germany. During the nineteenth century thousands of the best American students went to her Universities, and brought back with them a new outlook. They introduced the idea of research, graduate work, the seminar, the Ph.D. degree, and a portentous regard for a published thesis. These new ideas found vital expression in several remarkable personalities, distinctively American, who led a renaissance and gave direction to imported conceptions with such originality and genuineness that the American University throughout all its types may be recognized as possessing a definite national character.

No distinct reference is made to Canadian Universities, because it is those of the United States which by their number and magnitude have appealed to the imagination of the world. But Canadians, enjoying as we do such constant and friendly intercourse with the American schools, should be sympathetic and intelligent interpreters of their character and achievements, especially as our Universities, though in many respects radically different from theirs and like those of England and Scotland, have essential features peculiar to this continent.

At first sight the immense attendance at the greatest of the American Universities seems to be a phenomenon only to be paralleled in Paris at the close of the sixteenth century, but an analysis shows that short-period, or summer-session students greatly swell the numbers, and that many new professions have found a place for themselves among the faculties. Columbia, with its 18,000 or 20,000 students, has no more undergraduates in Colleges taking the regular B.A. courses in literature, history, or science than Oxford or Cambridge; nor in economics than the London School of Economics; nor does the Medical School of Edinburgh, or the technical school and faculty of Manchester, stand second in attendance to the largest parallel faculties in the United States. The fact of most importance is the number of institutions in America with very large attendances, such as Harvard, Yale, Pennsylvania, Cornell, Michigan, Illinois, Chicago, Wisconsin, Minnesota, California. The demand for higher education is continent-wide.

While it is, of course, the old-established faculties that give the University its character, it would be a mistake to generalize as to the dilution of the University idea by the multitude of attached departments and the part-time teaching which contribute to the attendance in these immense institutions. New stars being drawn into the orbit of the older planets make an impressive constellation. There are schools of agriculture,

education, commerce, dentistry, pharmacy, journalism, nursing; there are thronged conservatories of music; summer-sessions for six weeks and extension courses on almost every conceivable subject. The educational sky is thickly studded; nor can one venture to prophesy as to what feeble star may be travelling fast towards this cluster of schools and faculties. Are the Osteopaths, who ask a surer scientific foundation for their skilful massage, within recognition? Or have the Chiropractors a hope of regularizing their manual dexterity? What about the Optometrists who think that a little more optics would help them to fit glasses better?

At best the constant effort on the part of technical callings to get University recognition is the homage paid to its character; but danger lurks even in this enthusiasm. Not however from a demand that may arise for direct supervision of the instruction by outside authorities, for it cannot be said that the State which pays the piper has called the tune. It has not often acted in restraint of academic freedom. In fact, the teaching staffs of State Universities have, I think, had no more to fear from their Boards of Regents than those in the privately endowed from their Overseers or Trustees. These extensive developments, as has been already remarked, do not necessarily bode evil to the true University spirit. They may do the reverse. By this instruction the University is proffering its service to new classes of people, enabling them to fill their places in society, a duty which it cannot disregard, if it is the best instrument for doing so. We are living in a new state of affairs. Old orders are being dispossessed, and have to range themselves alongside new classes, such as artisans or farmers who see that power is ultimately based on knowledge. Much of the education of these classes must indeed be given in the schools—technical, agricultural, or commercial—but beyond this is the University which has something of its own to offer. In the middle ages the University was thronged with thousands of poor students, drawn from vigorous elements in society who sought training for the services of their time. To-day in a society of more varied interests, the State is providing for thousands of the new men who are to be masters of their situation in a sense that few of the scholars of Paris or Oxford ever were. These multitudes will not sterilize a University; they may bring vigorous life into it.

A greater danger is that of allowing the University to grow into an aggregation of professional faculties. When the public is being asked to accept a mill tax in its support, it is perilously easy for its advocates to show how necessary the University is for the training of practitioners in medicine, engineering or any other calling, who

will be useful to this generous public. Should this be the sole purpose of a University it becomes a mere matter of expediency whether any professional school, law, for example, should be associated with a University or be retained under the direction of the benchers or a provincial law society. The lawyer cherishing his own independence finds it hard to see why his experience in the practice of the law should not also fit him to run a law-school, forgetting, or perhaps never having known, that a University is a society of persons whose primary function is to educate and to extend the boundaries of knowledge.

In these days not merely of importunate candidates for the right of entry, but also of specialised professionalism, it must not be forgotten that a University is not a set of public utility schools bundled together by the tie of a common administration, nor yet a machine compacted of many parts. It is an organism with an intellectual, nay a moral spirit, which gives it unity and life. Life involves " structural integrity," each part supplying new elements to the other, fresh energy coursing from the centre to the remotest tips, the absorption of external substances and their transmutation into growth, and a renewal of the whole man from within by the process of assimilation. Through all the changes the individual persists from childhood to old age, bearing faint traces of identity in outward feature and form, and to be discerned in the inner man, of which the physical is the vesture, as the same person in spite of development or violent conversions.

This identity of life in each and every University, which constitutes its essence and gives it vitality, is a spirit of eager and disinterested learning and of zeal for the impartation and increase of knowledge. History shows that Universities became sterile when this spirit was lost. Routine professionalists who cultivate one corner of a University separate and apart may get a bare subsistence, but their trees soon grow scrubby.

This may be illustrated from the University of Paris. Nothing seemingly could be duller than the studies of the old *Trivium*, Grammar, Rhetoric and Dialectic, as they were pursued in the thirteenth century, but in fact the period was one of great intellectual activity, and the studies were not dead because the subjects with which they dealt exercised the minds of men with great power. Paris was the intellectual centre of Europe. Problems of faith and life were discussed not merely by some of the greatest teachers that Europe had known for centuries, but by students drawn from every part of Christendom. Thought was not a matter of formulæ and dogmas, but living ideas, and " the university then enjoyed an incomparable prestige and great moral

power with which both civil and ecclesiastical authorities had to reckon." But by the lapse of a few generations the spirit was drained off and the old formulæ were turned into shrunken and dried wine-skins. And strange to say the Renaissance did not provide for the University either new bottles or new wine. "The University of Paris ceased to be a great hearth of intellectual activity. . . . Medicine, Law, Theology, were merely professional schools without any ideal." *

The English Universities also illustrate this same law of decadence. In the thirteenth century Oxford became "a mere aggregate of colleges and privileged halls," † and in the next century at Cambridge, civil and canon law were banned because they so "well subserved the purposes of worldly ambition and social success" that as professional studies they overshadowed all higher culture. ‡

"Amongst so many great foundations of colleges in Europe," says Bacon, "I find strange that they are all dedicated to professions, and none left free to arts and sciences at large. For if men judge that learning should be referred to action they judge well; but in this they fall into the error described in the ancient fable, in which the other parts of the body did suppose the stomach had been idle, because it neither performed the office of motion, as the limbs do, nor of sense, as the head doth; but yet notwithstanding it is the stomach that digesteth and distributeth to all the rest. So if any man thinketh philosophy and universality to be idle studies, he doth not consider that all professions are from them served and supplied. And this I take to be a great cause that hath hindered the progression of learning, because these fundamental knowledges have been studied but in passage. For if you will have a tree bear more fruit than it hath used to do, it is not anything you can do to the boughs, but it is the stirring of the earth and putting new mould about the roots that must work it." §

History shows that the greatest periods in the life of a University and its professional schools are marked by the presence of teachers, scholars, and scientists of varied accomplishments in different faculties, whose severe ideals and common enthusiasm create an original centre of thought and investigation. As iron sharpeneth iron, so doth the countenance of a man his friend. Men consort together, one contributes new ideas to another, and a disinterested fellow-teacher pursuing earnest researches even in

* See Durkeim in *La Vie Universitaire à Paris.*
† Broderick, *A History of the University of Oxford*, p. 55.
‡ Mullinger, *History of University of Cambridge*, I., 319.
§ Bacon, *Advancement of Learning*, p. 78, Wright's edition.

an alien field may give the needed zest just when the routine of professional duties is sapping one's intellectual vitality. Indeed a University does not fulfil its purpose unless through disinterested men who give distinction to its staff it becomes a trustee for the wisdom, philosophy, taste and literature of the past, the warden of the gains of the human spirit which have been accumulated throughout the centuries. From time to time scientists and scholars come from Europe to American Universities to enrich their life, but the searching question is, do we produce our needed quota of those rare men who are required to keep culture alive? To illustrate. In this Western world the study of Greek is declining very rapidly. It is taught in but few schools; the enrolment in the Colleges is small, and if numbers were to determine its fate the language might be expected to disappear very soon. That this would be a disaster even those who follow the sciences would readily admit. But in the Universities there is hope as long as it is possible to sustain even for the very few such interpreters as Gildersleeve of Johns Hopkins or Shorey of Chicago. Through their classical standards they will create the critical judgment and taste which are indispensable for mature thinkers in other and more popular branches of literature and philosophy.

The University of which we are the guests has often been said to be the home of lost causes. Not that it is a museum of dead dogmas. Leaving aside, however, all thought of the political or ecclesiastical affinities which have prevailed here, perverse or loyal according to the temper of the judge, it is in a very real sense part of the glory of Oxford that she has nurtured causes which would have perished utterly if they had been left to the tender mercies of the progressive world, very confident a few years ago, but now peering with much solicitude into the shrouded future. We needed an Oxford Press to publish the "Fragments from Oxyrhynchus," for they would never compete with Mr. Wells's *Universal History* in popularity. Lost causes, lost leaders, buried cities, vanished civilizations—but for whom? Only for the multitude which uses the parchments of past ages for its palimpsests, blurring the script which coming generations will seek to recover. In Universities at least there must be some who know that there is a living past and who patiently interpret it to our feverish present.

But it is science that gives its prestige to the modern University, and in this respect the New World exhibits much vitality. American men of Science have been and now are worthy associates of their brethren in older Universities. The latest ideas and theories pass to and fro across the Atlantic, and the New World is quick

to take up fresh discoveries and hypotheses and return them confirmed or refuted. The mind untrained in literary taste, more common on this continent than in Europe, often is deeply interested in the theories of the physicist who links together a universe and the atom, and keeps us on the *qui vive* with the possibility of transcendent discoveries. Most of us can do little more than read the big headlines with which Science advertises her recent hypotheses. She is the entertaining member of the University family to-day. The humanities, not quite *passées*, affect to think that their younger sister, who has not been very long out, is given to over-much pirouetting before a fickle world that stands agape at her really astonishing movements. But when off the stage Science is in fact a very sober sister in dull overalls, and it is only on rare occasions that some fairy theory induces the laboratory maid to appear before the public.

The vital passion for making discoveries finds large scope in this New World, which provides rich materials for history, economics, geology and biology. The palæontologist who knows that on the banks of the Red Deer river in Alberta there is a veritable graveyard of Dinosaurs grows impatient as spring loosens the streams. The historian lives in a generation which has seen frontiers move half-way across a continent and disappear, and the sociologist is to be congratulated in having such problems as the commingling of races in America affords. Fortunate in their environment the Universities of this continent show forth their vitality by the manner in which on the whole they are becoming centres of unselfish intellectual adventure and of fresh interpretation. Besides the Universities there are great institutions devoted exclusively to the promotion of scientific research, which have been created by the munificence of Mr. Carnegie and Mr. Rockefeller. In these the competent investigator gets his chance for doing something on a large scale through an organisation made possible by princely support; and already the results are such that even the wayfarer of the world may read their value in terms that he can understand.

Lord Morley's pregnant words that "A vast space has to be traversed by every ray of light before it reaches the eye of the common understanding" * convey the practical truth, which Universities here cannot afford to neglect, of the need of teaching line upon line, precept upon precept, here a little and there a little. Even partially prepared persons who throng into summer-sessions and extension courses afford splendid opportunity for a University. In short courses for young farmers there is nothing alien to its

* Quoted in *Times Lit. Supp.*, February 11th, 1921.

spirit, provided they are taught by those who can create an enquiring mind. A few days may be sufficient to open the windows through which people who live in a work-a-day world may get glimpses into the venerable and orderly universe of literature and science. So too in the case of the artisan. If the University can awaken in him a sense of past human achievement and of the intelligibility of the commonplace present it will do a work worthy of itself. Numbers will not stifle its life, if its zeal is tempered by wisdom in imparting knowledge to earnest and mature minds.

One of the most vital parts of the American system is the College. It links England with this continent, though it has a character of its own. Round the residential College grew up the Eastern Universities, and from it has come the primacy which the Faculty or College of Liberal Arts holds in all the State Universities. It still claims to produce a moral education by oversight, a common life, and a course of liberal studies, and in the first two years of the Arts Faculty even of the best institutions the quality of work is not beyond that done in the leading schools of England and the Continent when the boys would still be under discipline. These two causes therefore may account for the sense of responsibility for moulding character that prevails in the American University. Even in professional faculties this idea is making its way. Advisers are appointed for medical students, oversight is exercised in laboratories, health services and compulsory physical training are being established.

This attitude towards the student will probably be strengthened by a demand from the people, who, contributing immense grants, will expect that the atmosphere of the institution shall not be injurious to the character of the undergraduate, and that he shall be found to be a person who by his tone of life will comfort and confirm the well-being of the State. Already one has got a long way in understanding the democracy of a State if one knows its University. In a sense it is an institute for human research—into intelligence and character—inspired with the hope of discovering in the constantly renewed stream of vigorous youth such well-endowed and representative persons as give promise to fashion the spiritual life of this newer world.

The University of America is doing for its people something such as the Academies did for Italy at the time of the Renaissance. It is a centre for scholars and investigators. It is expressing in its national form the ancient and perpetual ideals of humanism and science. It is interpreting the life of this New World. As yet its culture is less broad and deep than that of the greatest schools of

Europe, but it possesses compensation in the unspoiled enthusiasm of the people who show their faith in its future by their financial support, and by sending to it their sons and their daughters in such large numbers for an education which they believe is necessary for the salvation of their democracy.

ROBERT FALCONER.

THE UNIVERSITIES AND THE BALANCE OF STUDIES.

Third Paper.

The Place of the Humanities in the Education of Men of Science.

The growing belief in the value of science as a training for men who are to become leaders in industry, education, or social service, throws on the teachers of science in our Universities an ever-increasing responsibility for the education of such men, on whom the future welfare of the community will so largely depend. Year by year, the relative importance of scientific studies in the Universities increases as the demand for a training in science grows and as new branches of technology become sufficiently scientific to deserve inclusion in a University course. One after another, technical subjects which were confined to institutions of lower rank are recognized as deserving to qualify for degrees, and, especially in the newer Universities, the provision of direct training for the professions and for industry tends to become predominant. This situation involves certain new difficulties. The study of a science or of a branch of technology demands so much time, and proves so absorbing to the earnest student, that his outlook is apt to become cramped, unless a proper balance be maintained between technical and humanistic studies.

The older system of classical education was considered to justify itself, not by the number of experts in Greek or Latin studies that it produced, but by its effects on character and practical capacity. Men of science claim that these results may be obtained as well from a scientific education, and that the circumstances of the time call imperatively for men whose habit of mind is scientific, so that whilst they can apply their special knowledge directly, they can also face the new problems of industry and of public service in the spirit of science. The events of the war have enforced this lesson on many who did not appreciate it earlier. But if scientifically trained men are to take their proper positions in the community, they must be, in the fullest sense of the word, educated. This implies much more than the possession of adequate knowledge, more even than the capacity for thinking scientifically. Above all it implies a vision of knowledge in its true proportions and perspective. The man who has been highly trained in a specialized study, but who has never conceived of his science in its relation to the whole body of knowledge, is imperfectly educated. The scientific recluse may do work of great value, and some of the

greatest intellectual discoveries have demanded such intense mental concentration as to absorb the whole energies of a thinker, but such cases are exceptional, and cannot furnish a guide for general imitation. In a scientific leader of industry, whose functions include the interpretation of science to the world through its practical applications, narrowness of outlook is a grave defect, as it is in the public administrator, who will be increasingly chosen in the future, as we hope and believe, from among those trained in the methods and results of science.

The most important safeguard against such a limited vision is to be found in the historical spirit. An understanding of history most readily brings knowledge into right perspective. This fact has been recognized for some time by many teachers of science, who have adopted the historical method in their lectures. The student learns how his science grew, becomes acquainted with the lives of its founders and principal exponents, and in the most favourable cases studies their original writings. The new school of research in the history of science which has arisen in this country under the leadership of Dr. Singer, of Oxford, is doing admirable work in providing material for instruction of this kind. The classics of science are being made available to students, and there are excellent biographies of the great discoverers. The teaching of technology suggests another application of the historical method, since it provides an opportunity for bringing discoveries and inventions into relation with the events of history, and with the condition of society at different periods. To take an illustration from the subject of metallurgy, the influence of the search for the precious metals on the history of the nations of antiquity, the advance of a civilization based on iron over lands restricted to the use of bronze, and the production of iron in large masses as marking the real beginning of the industrial revolution, are topics which suggest themselves to the teacher as likely to stimulate the interest of the student and to quicken his understanding of the significance of his science. In the study of a pure science, the historical treatment gains greatly in value if the student be shown how each discovery was related to the state of intellectual development at the time when it arose. To be able to grasp this relation presupposes a good general understanding of the course of history by the student, for the foundation of which we must look to the Schools. Within recent years, the teaching of geography in Schools has been completely transformed, and what had often been a dull catalogue of unrelated facts has become one of the most living and inspiring of studies. The teaching of history would still appear to be in a less advanced state, although

there are active pioneers in this field also, and a similar transformation may be awaited with confidence.

Students of science who are to make the best use of their training should have such an acquaintance with general history as will enable them to understand, at least in broad outline, how the growth of science has been related to the evolution of human society. For them, the study of history must deal as much with the development of ideas as with the record of events, and should embrace the western world instead of being confined to a single country or to a single period. A movement towards the recognition of a study of universal history as the foundation of all education is already perceptible. Such a book as Mr. F. S. Marvin's *Living Past* provides an elementary framework of the kind which it is suggested should be familiar to all serious students of science.

The fullest comprehension of past times and of other civilizations comes, however, from an acquaintance with great literature, and no education can be worthy of the name which does not provide for such an acquaintance. Modern scientific thought has its roots in ancient Greece, and from the Greeks onwards the historical filiation of ideas is continuous. In the view maintained by the advocates of science and adopted in this paper, the course of training of a scientific man could not, as a rule, include the study of dead languages. There would be no room for Latin and Greek in a course having science as its foundation, and making such demands on the time and attention of the student as would be necessary if an adequate standard were to be reached. The mental training afforded by the study of the Latin and Greek languages would be replaced by practice in scientific reasoning, from the rigid logic of mathematics to the use of hypotheses and the interpretation of experiments. There is no reason why ignorance of the ancient languages should imply ignorance of the literatures. Granted that the beauties of style can only be appreciated by those who are masters of the language, the fact remains that comparatively few students reach so high a level, and that others need not be debarred from a useful and real knowledge of ancient masterpieces. This country is fortunate in having translations of the greatest writers which are worthy themselves to rank as literature, and the student whose education is to be scientific rather than classical may well familiarize himself with them. Stress is laid on the principle that the knowledge should come from actual reading of translations, and not from manuals or text-books. These works have their place, but the mental training which is here advocated can be obtained only by a study of the original authors.

Next, the student should be thoroughly familiar with the greatest literature of his own country. This should be a truism, and is fortunately accepted as such by many educationalists, but its general recognition will raise the whole level of education, and will make the scheme here outlined a much easier one to realize. A reading knowledge of two, or, if possible, three Continental languages should be within the grasp of students who are to be trained for posts of responsibility, and is in fact essential to the man who aspires either to become a scientific investigator or to assume control of technical processes. Science is international, but it has to cross the barriers of language. A knowledge of Continental languages acquired through the medium of good literature should furnish no inconsiderable literary equipment.

It will no doubt be argued that the programme suggested is far too extensive, and that most students would find it beyond their powers to accomplish so much in the limited time of a University course. To this it may be answered that what is proposed is a simplification as well as an extension of the boundaries of study. The literary foundation, like the scientific foundation, would have to be laid in the School. For the University to perform its functions efficiently the students must have been adequately prepared by their School education. It is not desirable that the Schools should carry the teaching of science so far as seriously to overlap the University course, although the arrangement by which candidates for Honours may attain to the standard of the Intermediate Examination before entering the University has its advantages. What is important is that the scientific foundations should have been well laid. The scholar should have been led from simple nature study through the class and laboratory work of the higher forms to understand the meaning of scientific method from actual experience of its employment in mathematics and in the physical and biological sciences. At the same time his training in history and literature, while avoiding cramming with masses of facts, should have encouraged in him a love of reading, and a certain capacity for appreciation of what is permanent in literature. Once given this sufficient preliminary training, it is unlikely that direct teaching of the Humanities would occupy a very large place in the University courses in science or technology, at least without far-reaching changes in the present courses for graduation. The greater use of the historical method in the teaching of science, with its continual reference to the progress of civilization, would furnish the necessary framework. For the rest, the habit of reading should have been established by this time, and judicious guidance in private reading might well be one of the functions of

the teaching staff of a University. The student's knowledge of his own language may be best enlarged by its continual use as a medium of expression. He should be encouraged to present the results of his scientific reading and of his experiments in the form of essays, the excellence of which should lie in their clearness and accuracy of statement rather than in conscious literary form. Senior students are usually expected to consult the published work on their chosen subject, making use, if possible, of French and German sources as well as of those in English, and the information thus collected should be submitted to the teacher in some better form than the bald catalogue of facts which is often considered to be sufficient. Modern scientific publications are too frequently marred by careless writing and by the use of the jargon of the laboratory or the workshop, and writers on technology are even worse offenders in this respect. There is no necessary connexion between science and inelegance of expression, and in fact inelegance is usually a sign of looseness of thought. A study of the great scientific masters is the best corrective to this tendency. Faraday wrote perfectly simple and direct English, whilst Huxley and Poincaré are recognized as masters of the languages in which they wrote. Readers of some recent scientific works in English must have realized that it is possible to write attractively and vigorously on such an abstruse subject as relativity without any loss of precision. Greater attention to the study of literature in the training of students of science would soon cause this evil to disappear.

The subject of economics has gained admission to many of the University courses in engineering and other branches of applied science. It is recognized that a student who aspires to direct an industry should have some knowledge of the economic conditions under which that industry exists and develops. Economics is in reality only a part of a larger science, that of sociology, using that word to denote the whole science of human society. To the student who has had such a training in general history as is here suggested, and who has further had his reasoning powers exercised and disciplined by applying them to a wide range of scientific ideas, economic facts would present themselves in a different light from that in which they appear to one whose training has been exclusively technical.

The principal obstacle in the way of a proper balance between scientific and humanistic studies is the increasing subdivision and specialization of learning. When a subject is broken up into a number of distinct specialisms, it is difficult to maintain that unity and cohesion which a liberal education requires. The medieval University had its guiding philosophy, and all the sub-

jects of study were definitely related to the philosophical system, but such a co-ordinating principle is usually lacking at present. There is no generally accepted system of philosophy, and although scientific men are gradually evolving a working philosophy of their own—an essentially relative one—it has hardly been applied in such detail to individual studies as to provide the necessary unity. The synthetic view is lacking. If science be regarded as including in its scope the laws of human society as well as those of the physical universe and of life, a synthesis becomes possible, and scientific studies can be co-ordinated. Science without sociology is imperfect, but with it the artificial division between scientific and humanistic studies disappears. This view may not meet with general acceptance, but it is put forward as a possible solution of the undoubted difficulty which has to be faced in devising a scheme of scientific education. A grouping and co-ordination of studies on the lines suggested would probably call for some sacrifice of the present examination system, but that opens up a question too large to be dealt with in the present paper.

Briefly expressed, the argument here presented is that the reconciliation of the scientific and humanistic sides of education is only to be effected by bringing the two into closer relationship, by making the teaching of history scientific and that of science historical. The other alternative, of balancing the specialized courses of instruction in science by a certain number of equally specialized courses in the Humanities, would only result in overloading the curriculum and in throwing an extra burden on the student without bringing with it any sufficient advantages. The main object of a truly scientific education should be a synthetic outlook on the universe. Both science and history have become increasingly analytic, as knowledge has increased and its departments have multiplied. The problem to be solved in the education of the next generation is that of unifying and co-ordinating knowledge, so that without any loss of accuracy in detailed and specialized study, the student may be enabled to see science in due relation to the life of the community, to realize his debt to the past, and thus to direct his knowledge and ability to their main end, that of human welfare.

CECIL H. DESCH.

THE UNIVERSITIES AND THE BALANCE OF STUDIES.

Fourth Paper.

Science in General Education.

We are becoming aware that in adjusting a curriculum, it is not sufficient to agree that some specified subject should be taught. We have to ask many questions and to make many experiments before we can determine its best relation to the whole body of educational influences which are to mould the pupil.

In the first place it is necessary to keep before our minds that nine-tenths of the pupil's time is, and must be, occupied in the apprehension of a succession of details—it may be facts of history, it may be the translation of a definite paragraph of Thucydides, it may be the observable effects in some definite physical experiment. You cannot learn Science, *passim;* what you do learn in some definite hour of work is perhaps the effect on the temperature of a given weight of boiling water obtained by dropping into it a given weight of lead at another definite temperature, or some analogous detailed set of facts. It is true that all teaching has its rhetorical moments when attention is directed to æsthetic values or to momentous issues. But practical schoolmasters will tell you that the main structure of successful education is formed out of the accurate accomplishment of a succession of detailed tasks. It is necessary to enforce this point at the very beginning of discussion, and to keep it in mind throughout, because the enthusiasm of reformers so naturally dwells on what we may term "the rhetoric of education."

Our second step in thought must be to envisage the principles which should govern the arrangement of the detailed lessons in the subject. An educational cynic will tell you that it does not make much difference what you teach the pupils: they are bound to forget it all when they leave school; the one important thing is, to get the children into the habit of concentrating their thoughts, of applying their minds to definite tasks, and of doing what they are told. In fact, according to this school of thought, discipline, mental and physical, is the final benefit of education, and the content of the ideas is practically valueless. An exception is made for pupils of unusual ability or of unusual twist of interest. I conceive this summary solution of the educational problem to be based on an entirely false psychology, and to be in disagree-

ment with experience. It depends for its plausibility on the erroneous analogy of the intellectual organism with some kind of mechanical instrument such as a knife, which you first sharpen on a hard stone, and then set to cut a number of different things quite disconnected with the stone and the process of sharpening. The other sources of the theory are the disillusionment of tired teachers, and the trenchant judgments of those who will not give the time to think out a complex question. But as this opinion is not likely to be largely represented among members of the Congress, further contemplation of it is unnecessary. In considering the general principles which are to govern our selection of details, we must remember that we are concerned with general education. Accordingly we must be careful to avoid conceiving science either in quantity or quality as it would be presented to the specialists in that subject. We must not assume ample time or unusual scientific ability. Also in recent years the congestion of subjects in the curriculum, combined with the opposing claims of specialism, has led practically all English Schools and the Board of Education to adopt certain principles regulating the relations between general education and special subjects. Our discussion must take these for granted, if we wish to be practical. Education up to the age of sixteen, or sixteen-and-a-half, is to be dominated by the claims of general education, and extended attention to any special subject is to be limited by the claims of the whole balanced curriculum. In the case of a pupil of any reasonable ability there will be time for some specialism ; but the ruling principle is, that where the claims of the two clash, the specialism is to be sacrificed to the general education. But after the age of sixteen, the position is reversed. The pupil is expected to devote the larger proportion of his time to some adequate special subject, such as classics, science, mathematics, or history, and the remaining portion to suitably contrasted subsidiary subjects, such as modern languages for a scientist or a mathematician. In other words, before sixteen the special subject is subsidiary to the general education, and after sixteen the general education is subsidiary to the special subject. Accordingly our discussion divides into two sections, namely, science in general education before the age of sixteen, and after the age of sixteen. The second division may also be taken to cover the University stage. This principle of a preliminary general education has set to educationalists a new problem which has not as yet been adequately worked out in any subject. Indeed it is only just dawning on responsible people in its full urgency. But on its solution depends the success of that modern system of education to which we are now committed.

The problem is this: In all schools, with negligible exceptions, the general education has to be arranged with practical uniformity for the school as a whole. In the first place it is not very certain who among the pupils are the future scientists, who the future classical scholars, or who are the future historians. For the greater number, the desirable differentiation will only gradually disclose itself. Secondly, we may not assume that the majority of boys or girls in secondary schools will remain at school after the age of seventeen, and thus continue any portion of the general education after the first period. Accordingly for both these reasons, the preliminary general training in each subject should form a self-contained course, finding its justification in what it has done for the pupil at its termination. If it is not justified then, it never will be, since at this point, in the vast majority of instances, the formal study of the subject ends.

If we examine the cause of the educational dissatisfaction at the end of the last and at the beginning of this century, we shall find that it centres round the fact that the subjects in the curriculum were taught as incomplete fragments. The children were taught their elementary mathematics exactly as though they were to proceed in later years to take their degrees as high wranglers. Of course most of them collapsed at the first stage; and nobody—least of all the children—knew why they had been taught just that selection of meaningless elaborate preliminaries. Anyhow, as they soon forgot it all, it did not seem much to matter. The same criticism applied to the classics, and to other subjects. Accordingly, every subject in the preliminary training must be so conceived and shaped as yielding, during that period, general aptitudes, general ideas, and knowledge of special facts, which, taken in conjunction, form a body of acquirement essential to educated people. Furthermore it must be shown that the valuable part of that body of acquirement could not be more easily and quickly gained in some other way, by some other combination of subjects.

In considering the framing of a scientific curriculum subject to these conditions, we must beware of the fallacy of the soft option. It is this pitfall which has ruined so many promising schemes of reform. It seems such an easy solution, that, in order to gain time, we should shape a course comprising merely the interesting descriptive facts of the subject and the more important and exciting generalizations. In this way our course is self-contained and can easily be compressed into a reasonable time. It will certainly be a failure, and the reason of the failure illustrates the difficulty of the art of education. In order to explain this, let us

recur to the educational cynic whom I introduced at the beginning of this paper; for he really is a formidable critic. He will point out that in a few years your pupil will have forgotten the precise nature of any facts which you teach him, and will almost certainly have muddled your generalizations into incorrect forms. The cynic will ask, What is the use of a vague remembrance of the wrong date for the last glacial epoch, and of a totally erroneous idea of the meaning of "the survival of the fittest"? Furthermore, we may well doubt whether your science, as thus taught, will be really interesting. Interest depends upon background, that is to say, upon the relations of the new element of thought or perception to the pre-existing mental furniture. If your children have not got the right background, even "the survival of the fittest" will fail to enthuse them. The interest of a sweeping generalization is the interest of a broad high road to men who know what travel is; and the pleasure of the road has its roots in the labour of the journey. Again facts are exciting to the imagination in so far as they illuminate some scheme of thought, perhaps only dimly discerned or realized, some day-dreams begotten by old racial experience, or some clear-cut theory exactly comprehended. The complex of both factors of interest satisfies the cravings inherent in that mysterious reaching out of experience from sensation to knowledge, and from blind instinct to thoughtful purpose.

The conclusion is that you can only elicit sustained interest from a process of instruction which sets before the pupils definite tasks which keep their minds at stretch in determining facts, in illustrating these facts by ideas, and in illustrating ideas by their application to complex facts. I am simply enforcing the truism that no reform in education can abolish the necessity for hard work and exact knowledge.

Every subject in the general education must pull its weight in contributing to the building up of the disciplined power of definitely controlled thought. Experience amply proves that no one special training is adequate for this purpose; the classical scholar cannot necessarily focus mathematical ideas, and the mathematician may be a slovenly thinker outside his science, and neither classic nor mathematician may have acquired the habits of procedure requisite for observation and analysis of natural phenomena. In this connection the function of the study of a subject is not so much to produce knowledge as to form habits. It is its business to transmute thought into an instinct which does not smother thought but directs it, to generate the feeling for the important sort of scientific ideas and for the impor-

tant ways of scientific analysis, to implant the habit of seeking for causes and of classifying by similarities. Equally important is the habit of definitely controlled observation. It is the besetting fallacy of over-intellectual people to assume that education consists in training people in the abstract power of thought. What is important is the welding of thought to observation. The first effect of the union of thought and observation is to make observation exact. You cannot make an exact determination of the passing phenomena of experience unless you have predetermined what it is you are going to observe, so as to fix attention on just those elements of the perceptual field. It is this habit of predetermined perception and the instinctive recognition of its importance which is one of the greatest gifts of science to general education. It is here that practical work in the laboratory, or field work in noting geological or botanical characteristics, is so important. Such work must be made interesting to obtain the proper engrossment of attention, and it must be linked with general ideas and with adequate theory to train in the habit of predetermining observation by thought. Every training impresses on its recipient a certain character; and the various elements in the general education must be so handled as to enrich the final character of the pupil by their contribution. We have been discussing the peculiar value of science in this respect. It should elicit the habit of first-hand observation, and should train the pupil to relate general ideas to immediate perceptions, and thereby obtain exactness of observation and fruitfulness of thought. I repeat that primarily this acquirement is not an access of knowledge but a modification of character by the impress of habit. Literary people have a way of relegating science to the category of useful knowledge, and of conceiving the impress on character as gained from literature alone. Accordingly I have emphasized this point.

We have, however, not yet exhausted the analysis of the impress on character due to science. The imagination is disciplined and strengthened. The process of thinking ahead of the phenomena is essentially a work of the imagination. Of course it involves only one specific type of imaginative functioning which is thus strengthened, just as poetic literature strengthens another specific type. Undoubtedly there will be some interplay between the types, but we must not conceive the imagination as a definite faculty which is strengthened as a whole by any particular imaginative act of a specific type. Accordingly science should give something to the imagination which cannot be otherwise obtained. If we are finally to sum up in one phrase the peculiar

impress on character to be obtained from a scientific training, I would say that it is a certain type of instinctive direction in thought and observation of nature, and a facility of imagination in respect to the objects thus contemplated, issuing in a stimulus towards creativeness. We now turn to the other aspect of science. It is the systematization of supremely useful knowledge. In the modern world men and women must possess a necessary minimum of this knowledge, in an explicit form, and beyond this, their minds must be so trained that they can increase this knowledge as occasion demands. Accordingly the general education during the "pre-sixteen" period must include some descriptive summaries of physiological, botanical, physical, chemical, astronomical, and geological facts, even although it is not possible to choose all those sciences as subjects for serious study in the school curriculum. Especially this is important in the case of physiology owing to the accidental circumstance that we all have bodies.

We see therefore that the scientific curriculum must have a soft element and a hard element. The hard element will consist in the attainment of exact knowledge based on first-hand observation. The laboratory work will be so framed as to illustrate such concepts and theoretical generalizations as the pupil is to know. I would insist that science in this stage of education loses nearly all its value, if its concepts and generalizations are not illustrated and tested by practical work. This union of acquirement of concepts, of comprehension of general laws, of reasoning from them, and of testing by experiment will go slowly at first, because the child's powers of mind have to be built up. The pupil has not got the requisite generalizing faculty ready made, and it is the very purpose of the education to give it to him. Furthermore little bits of diverse sciences are useless for the purpose; with such excessive dispersion the systematic character of science is lost, nor does the knowledge go deep enough to be interesting. We must beware of presenting science as a set of pretentious names for obvious facts or as a set of verbal phrases. Accordingly the hard element in the scientific training should be confined to one or at most two sciences, for example, physics and chemistry. These sciences have also the advantage of being key sciences without which it is hardly possible to understand the others. By the age of sixteen every pupil should have done some hard work at these two sciences, and—generally speaking—it is scarcely possible that there will have been any time for analogous work in any other natural science, after the necessary mathematical time has been allotted. Probably in a four years' course the best quantitative division would be two years of physics and two years

of chemistry, and mathematics all the time. But assuredly it is not desirable to do all the physics in the first period of two years, and all the chemistry in the second period. The first simple ideas clustering round the most elementary experiments will undoubtedly be physical and mechanical. But as some serious progress is made the two sciences illustrate each other, and also relieve each other by the width of interest thus developed. For example, the influence of physical conditions, such as temperature, on the rate, and even the possibility, of chemical transformations is an elementary lesson on the unity of nature, more valuable than abstract formulation of statement on the subject.

Two factors should go to form the soft element in scientific education. The first and most important is browsing, with the very slightest external direction, and mainly dependent on the wayward impulses of a student's inward springs of interest. No scheme for education, and least of all for scientific education, can be complete without some facility and encouragement for browsing. The dangers of our modern efficient schemes remind one of Matthew Arnold's line * " For rigorous teachers seized my youth." Poor youth ! Unless we are careful, we shall organize genius out of existence ; and some measure of genius is the rightful inheritance of every man. Such browsing will normally take the form either of chemical experiments, or of field work in geology, or in zoology, or in botany, or of astronomical observation with a small telescope. Anyhow, if he can be got to do so, encourage the child to do something for himself according to his own fancy. Such work will reflect back interest on to the hard part of his training. Here the collector's instinct is the ally of science, as well as of art. Also it is surprising how many people—Shelley, for example—whose main interests are literary derive the keenest pleasure from divagations into some scientific pursuit. In his youth, the born poet often wavers between science and literature ; and his choice is determined by the chance attraction of one or other of the alternative modes of expressing his imaginative joy in nature. It is essential to keep in mind, that science and poetry have the same root in human nature. Forgetfulness of this fact will ruin, and is ruining, our educational system. Efficient gentlemen are sitting on boards determining how best to adapt the curriculum to a uniform examination. Let them beware lest, proving themselves descendants of Wordsworth's bad man, they

> " Take the radiance from the clouds
> In which the sun his setting shrouds."

* Stanzas from the *Grande Chartreuse*.

The other factor should consist of descriptive lectures, designed for the purpose of giving necessary scientific information on subjects such as physiology, and also for the purpose of exciting general interest in the various sciences. No great amount of time need be taken up in this way. I am thinking of about three to six lectures a term. It should be possible to convey some arresting information about most sciences in this way, and in addition to concentrate on the necessary information on particular points which it is desired to emphasize. The difficulty about such lectures is that comparatively few people are able to give them successfully. It requires a peculiar knack. For this reason I suggest that there should be an exchange of lecturers between schools, and also that successful extension lecturers should be asked to take up this kind of work. It is evident that with a little organization and co-operation the thing could be done, though some care would be required in the arrangement of details. Finally we come to the position of science in general education after the age of sixteen. The pupil is now rapidly maturing and the problem assumes entirely a new aspect. We must remember that he is now engaged mainly in studying a special subject such as classics, or history, which he will continue during his subsequent University course. Among other things, his power of abstract thought is growing, and he is taking a keen delight in generalizations. I am thinking of boys in the sixth form and of undergraduates. I suggest that in general practical work should be dropped, so far as any official enforcement is concerned. What the pupil now wants is a series of lectures on some general aspects of science, for example, on the conservation of energy, on the theory of evolution and controversies connected with it, such as the inheritance of acquired characters, on the electromagnetic theory of matter and the constitutions of the molecule, and other analogous topics. Furthermore, the applications of science should not be neglected—machinery and its connection with the economic revolution at the beginning of the nineteenth century, the importance of nitrates and their artificial production, coal-tar, aeronautics, and other topics. As in the case of lectures at the earlier stage, not much time should be occupied by them, and also there is the same difficulty in finding the lecturers. I believe that these lectures are easier to give than the more elementary ones. But I think that it will still be found necessary to create some organization so that local talent can be supplemented by external aid.

Also at this stage books can be brought into help; for example, Marett's *Anthropology* and Myres' *Dawn of History*, both in "The

Home University Library," will form a bridge conducting the Historians from the general theory of zoological evolution to the classical history which forms the commencement of their own special studies. I merely give this instance to show the sort of thing, and the scale of treatment, that I am thinking about. But this general treatment of science in the later stage of education will lose most of its value, if there is no sound basis laid in the education before the age of sixteen.

I will conclude with a general caution which summarizes the guiding principle of the preceding remarks: There is very little time, and so in the formal teaching above all things we must avoid both an aimless aggregation of details either in class or in laboratory and the enunciation of verbal statements which bring no concrete ideas to the minds of the pupils.

A. N. WHITEHEAD.

THE UNIVERSITIES AND THE BALANCE OF STUDIES.

Fifth Paper.

The Question of Specialism in University Curricula.

Some years ago a lamented friend, in his day a well-known Oxford tutor, took his seat in a train for town. Some undergraduates shared his compartment, and others on the platform had come to see them off. "Well, good-bye, Atmosphere, old man," said one of the passengers through the carriage window, as the train began to move. "Your friend has a singular name," the tutor ventured. "Did I understand you to address him as 'Atmosphere'?" "Oh! yes," said the other, "Atmosphere—that's a nickname. You see, when he came up we asked him what he was going to work at. Well, his answer was that he didn't mean to work at anything in particular. What he mainly wanted to get out of Oxford was '*atmosphere*,' so he has been known as '*Atmosphere*' ever since."

The young man thus distinguished—likely enough he has won more solid distinction since—had evidently taken the trouble—which all do not—to form in his own mind some conception of what the University could do for him. Perhaps "atmosphere" was his phrase for a general education, and in the frank language of youth he may have expressed a sentiment, which has been seriously maintained by serious persons, viz., that specialism should not take the first place in the curriculum of a really high-class University. "The first problem that must be faced," said Sir Charles Oman in his inaugural lecture on the Study of History, "is that this University is a place of education as well as a place of research. It is sometimes difficult to correlate its two functions: it often seems difficult to determine how far they can or ought to be discharged by the same body of workers. But, whatever may be our views on this point, there remains the obvious fact that we are confronted by a large body of young men who have to be educated, and that the larger proportion of them are intended for careers for which no technical schools curriculum exists. For this let us be thankful. I shudder to think that there are fanatics who would be prepared to draw up the regulations for a special education for any line of life—journalism, the Stock Exchange, Politics, Charity Organization or the life of the country gentleman."

Prof. Oman, therefore (if I may coin a word), is on the side of the

generalists ; his colleague, Prof. Firth, is for encouraging *specialists ;* and if we add, as a third class, the *nihilists*, that is, students who come to the University with the intention of studying nothing or as little as possible, we have classified the student section of our community. What, then, should be the attitude of a University towards these various classes ? In my view a University should turn out students of all three complexions—the nihilist section should be turned out immediately (better still, do not let it in), the other two sections after an interval, augmented with degrees. And here we are confronted at once by questions of organization and by the more fundamental question of the circumstances and aims of the individual institution. *Non omnia possumus omnes.* In the Dominions the opportunities for many branches of advanced study do not, and perhaps in a sense never can, exist as they exist in this country. This is particularly true of historical and literary studies which depend so much upon access to records, and upon a just appreciation of the influence of tradition and social environment. These new countries are looking to the Universities of the old country to do for them what they cannot at present do for themselves, to supply them with ample and varied opportunities of post-graduate study. I say *post-graduate*, for, whatever opinions may be entertained with regard to the place of specialism in the undergraduate curricula (a subject of which I will speak later), there will, I suppose, be no question as to the necessarily specialized character of post-graduate studies. In the Universities of the new world the dividing line between graduate and post-graduate study is strongly marked, and the latter is as completely organized as the former. To many of my audience this is perfectly familiar and they will perhaps bear with me if for the sake of others who may not be equally conversant with the methods of an American University, I refer in some detail to the system of advanced study which exists in the University of Harvard. The principal departments of the University are the following :—

(1) The Faculty of Arts and Sciences, consisting of three sections :—

(*a*) The Undergraduate Department (Harvard College), which gives access to the degree of B.A. and B.Sc.

(*b*) The Graduate School of Arts and Sciences, which usually requires a bachelor's degree as a condition of admission. It recommends for the degrees of M.A. and of Ph.D. Exceptionally it admits qualified students who are not candidates for a degree.

(*c*) Special students, who may become candidates for the degree of Associate in Arts.

Each of these sections has its own administrative board, which is subject to the general authority of the Faculty. Every student makes his choice of studies according to the regulations of the department to which he belongs.

Of these, the section which constitutes the Graduate School of Arts and Sciences claims special attention. It has charge of graduate students engaged in advanced study and research in the various fields of Arts and Sciences.* How various will appear from a bare enumeration of the divisions and departments of the Faculty, each of which, I must emphasize, invites and undertakes to provide instruction for advanced as well as undergraduate students. They are as follows :—

(1) Semitic Languages and History.
(2) Ancient Languages with two departments :—
 (*a*) Indic Philology.
 (*b*) The Classics—Greek and Latin.
(3) Modern Languages with four departments :—
 (*a*) English.
 (*b*) Germanic Languages and Literatures.
 (*c*) French and other Romance Languages and Literatures.
 (*d*) Comparative Literature.
(4) History, Government and Economics (three departments).
(5) Philosophy.
(6) The Fine Arts.
(7) Music.
(8) Mathematics.
(9) Physical Sciences :—
 (*a*) Physics.
 (*b*) Engineering Sciences.
(10) Chemistry.
(11) Biology :—
 (*a*) Botany.
 (*b*) Zoology.
(12) Geology :—
 (*a*) Geology and Geography.
 (*b*) Mineralogy and Petrography.
(13) Anthropology.
(14) Medical Sciences.

* Its students comprise not only candidates for higher degrees, but many others, who desire to take advantage of its facilities for instruction and research.

In most of the above departments of study the courses of instruction are distributed into three groups, viz. :—

Courses primarily for undergraduates (lower group).
Courses for undergraduates and graduates (middle group).
Courses primarily for graduates (upper group).

Most of the courses in the lower group and many of those in the middle group are, as a rule, offered every year. Many courses in the middle and upper group are given in alternate years.

Thus far of advanced studies in the Arts and Sciences. But this is merely one of the Schools in the University. To complete the picture you must add the Engineering School,* the Graduate School of Business Administration, which handles such various matters as Accounting, Business Statistics, Foreign Trade, Industrial Management, Lumbering, Marketing, and Transportation; † the Faculty of Architecture, which makes recommendation for the degrees of Master in Architecture and Master in Landscape Architecture, the Divinity School, the Law School, famous the world over, which provides a three years' course tending to the LL.B. degree, and also a stiff course for the doctorate. Then there is the Graduate School of Education, and, lastly, the Faculty of Medicine, together with the School of Tropical Medicine, and the Dental School. You have there, surely, an extraordinarily complete programme of advanced studies. To ask whether we in Oxford have anything comparable is unhappily to pose a question which admits of only one answer. Not to enlarge upon a subject, which suggests painful reflections upon the difference between our "is" and our "might be," I will conclude this part of my paper by a citation from Prof. Firth's pamphlet on Modern History in Oxford in which, dealing with our new degree of Doctor of Philosophy (which, perversely enough, we insist on calling the Doc. Phil., when all the rest of the world calls the degree Phil. Doc. or Ph.D.) and its relation to advanced historical study, he writes: "If the new degree had been created in 1897 instead of 1917 advanced studies in Oxford might have been less backward than they are. The paucity of advanced students here and the imperfections of our arrangements for teaching them are results of the haphazard way in which the study of Modern History grew up in

* Organized to provide undergraduate and graduate instruction and opportunities for research in the following departments of study, viz., Mechanical Engineering, Electrical Engineering, Electric Communication Engineering, Civil Engineering, Sanitary and Municipal Engineering, Sanitary Chemistry, Mining, Metallurgy, Industrial Chemistry.

† Connected with this Graduate School is the Bureau of Business Information. The primary purpose of this Bureau is to gather information regarding typical everyday business methods and problems as an aid to instruction in the School. The retail shoe business was the first to be studied.

the University and of its defective organization for the last fifty years. Unless there is a change, not merely in the machinery of our historical education, but also in its aims and its spirit we can never see the great historical school in Oxford which is to be *fons scientiarum* for England and for English-speaking peoples." What the Regius Professor says of the want of organization in his own department of modern history may, I believe, be alleged with equal truth of many other of our departments of study. In the Faculty of Law we have some advanced lectures, but no organization of advanced study, and the course for the B.C.L. degree, the highest law degree for which instruction is given, is to a large extent a repetition of work which most of the candidates have already covered in their studies for the Honour School of Jurisprudence.* The backward state of our organization for advanced studies in this University must surely be matter of regret to every one who has the interests of the University and (I will add) of the Empire at heart.

The Dominions, we have seen, cannot at present meet their requirements in this direction from their own resources. Naturally they do not wish that all their best men should be compelled to go outside the Empire for facilities for advanced study. They look to us to supply their need. And find us—shall I say, not fully awake to the exigencies of the occasion ?

> "And as the Cock crew those who stood before
> The Tavern shouted, 'Open, then, the door;
> You know how little time we have to stay,
> And once departed may return no more.'"

Never in the history of University education was there such an opportunity as still offers, but will not much longer offer, itself to the Universities of this country. Are we here, in Oxford, alive to it ? Have we even now learnt to take a large and imperial view of education ? If the answer must be in the negative, I conjure the representatives of the Dominions attending this Conference to tell us with the utmost frankness what they want, and what (if the case be so) they do not get. You have not crossed "shadowy mountains and noisy seas" to bandy words of compliment or pledge us in the—to some of you—unfamiliar loving cup. If you are eating our beef, you need not speak with an ox upon your tongue. Let us make the most of an unexampled opportunity.

Before leaving the subject of specialism in relation to post-graduate study, I will touch briefly on one problem which

* Steps are now being taken to improve this state of things by making some changes in the Roman Law part of the examination.

necessarily presents itself, namely, the question how far University studies can usefully serve as an introduction to the professions which call for a highly specialized form of practical skill. "Is it possible," asks Prof. Jenkin, "by any College training to make a man an engineer?" "No," he says, "it is not. All that can be given in College is the scientific training." The same answer has been given with regard to medicine, law, politics, journalism, and many other of the practical arts of life. To my mind, the limitation of University training in such matters is sometimes unduly stressed. Of course, lectures on pathology are no substitute for walking the hospitals. But much will depend upon the circumstances of each profession, amongst which I include the character of the practical education, if any, supplied by the profession itself. In my own profession, for example, I see no reason why Conveyancing and Pleading should not be made the subject of University training, and a trial court designed to develop skill in advocacy is a common feature of the American Law Schools. The difficulty lies not so much in teaching such things, as in finding persons who are competent and willing to teach them.

Of the place of specialism in undergraduate study I need say little. One does not expect or desire boys fresh from school to pursue highly specialized courses. "He that will have a cake out of the wheat must needs tarry the grinding." But some measure of specialism is permitted, and encouraged. If not, why the various avenues to the B.A. degree afforded by our Honour Schools? These, if I may say so, serve quite well the purpose for which they exist. They humanize the studies which fall within their sphere, relieving the study of law, for example, of the defect which Burke remarks in it, that it is more calculated "to quicken and invigorate the understanding than to open and liberalize it." And I see no reason why in this limited sense specialism should not be carried further by raising to the rank of Honour Schools some of the branches of study which with us at present are rewarded only with a diploma. In conclusion, I may be allowed to mention as the result of fifteen years spent in preparing men for our Law Schools, that the consciousness that our studies had a very direct bearing upon the professional career which the great majority of the students intended to pursue was a very real stimulus both to teacher and to taught. We did not feel that there was anything unworthy about our studies, because they were motived, in a measure, by considerations of practical utility.

R. W. LEE.

Discussion.

PRINCIPAL HERAMBACHANDRA MAITRA, M.A. (Calcutta): It is nearly a century since Rammohun Roy urged the British Government to introduce a system of liberal Western education in India, on the ground that his countrymen suffered from the want of a knowledge of the useful sciences, as Europe had suffered before the foundations of modern science were laid by Bacon. But only a small proportion of our students can find accommodation in the science classes of Indian Universities. The New University Regulations, based on the recommendations of the Indian Universities Commission, have, we gratefully admit, given an impetus to the teaching of science by requiring students to go through a specified course of laboratory work under competent instructors and by the creation of degrees in science. And the Calcutta University, I rejoice in being able to say, has been enabled, by the generosity of two of our most distinguished countrymen, to establish a Science College in Calcutta for those post-graduate students who are unable to join either of the two Government Colleges in Bengal which carry science teaching beyond the graduate stage. This new institution is rendering an invaluable service to our country by providing facilities for research for Indian professors who are not in Government service. But the demand in Bengal for a knowledge of some sciences—notably physics and chemistry—is far in excess of what the institutions working under the University are able to meet. The demand is perfectly legitimate, and an earnest effort should be made by Government and by the educated public to meet it.

We cannot, however, ignore the fact that there is a tendency on the part of many, both in the East and the West, to assume that a knowledge of science is the only knowledge worth seeking. The materialistic bent of the present age is reflected in this as in so many other aspects of the life and thought of these times.

It should be the aim of every great seat of learning to lay the utmost stress on the principle of the *unity of knowledge* and the variety as well as the vastness of the fields which await exploration —nay, to impress upon the student the fact that there are regions of study and thought that now lie beyond the ken of the human mind. This can only be done, not merely by providing a comprehensive scheme of studies in which every important branch of knowledge has its due place, but by taking steps to make the student belonging to a particular department or section of a University realize that there is much to be known outside the

limits of the particular branch of knowledge with which he is immediately concerned. About half-a-century ago an eminent educationist of this country said that, "while the older practice in education was to aim at the discipline of the mind, the modern seeks to store it with information." Every course of study provided by a University should be judged, not merely as a means of storing the mind with information, but as an instrument for promoting the discipline of the mind. The value of instruction in the elements of science as a means of making the student acquire the habits of close attention to facts and careful reasoning, is universally recognized; and none would deny the necessity of including such instruction as an essential element in a scheme of University education. But the seekers of knowledge suffer as much from vanity and a tendency to dogmatize on things about which they know nothing as from inattention to facts and illogical reasoning. Some continental Universities have, I learn, come to realize the necessity of the study of philosophy as a means of enabling science students to perceive the limits of science and recognize the existence of spheres of knowledge requiring the play of other faculties and the use of other apparatus than those that are needed in the study of material phenomena; and they have accordingly made the study of philosophy compulsory. It is a question worthy of serious consideration whether those students of our Universities who have not taken up philosophy as a subject of study before graduation, should not be required to attend a course of lectures on that subject after they have passed their degree examination. There will, of course, be wide differences of opinion as to the means to be employed for the attainment of the object I have indicated. But all supporters of liberal education ought to accept the principle, that every great seat of learning should aspire to make the seeker of knowledge realize that the fabric of culture is a house of many mansions.

THE REV. D. MACKICHAN, D.D. (Bombay): In this first session of the University Congress, presided over by one of India's most distinguished Viceroys, it seems fitting that the Universities of India should give some expression to the interest which they feel in the questions now under discussion.

The problems that have been before us to-day have forced themselves also on the attention of the Senates of our Indian Universities. They have arisen in the East in practically the same form in which they have presented themselves to the Universities of the West; but while we have only a comparatively

brief experience to guide us, you have behind you the experience of the ages. The question is not simply that of the study of the physical sciences pursued with a view to technological ends or to the acquirement of a professional training, but as a part of a well-rounded education. We are discussing the claim of science to a place in the curriculum of the University as designed not for the man who aims at becoming a specialist in science, but also for the man who desires to be educated in the broadest sense of the term. It seems to me that one of the aims of education should be to place us as far as possible in intelligent relation to our environment. To exclude from this environment those spiritual elements that form so essential a part of it would, as the last speaker has rightly urged, be a fatal omission ; and to omit from it the physical portion of that environment would be an equally obvious error.

In the University of Bombay an attempt was made a few years ago to alter the curriculum in a manner which would have practically excluded physical studies from the higher portions of the ordinary curriculum in arts. Fortunately the attempt was defeated and the University refused to allow itself to be landed in narrow specialism. Many Indians in the Senate as well as their instructors from the West, recognized the importance of the study of science to mental discipline, and its special value in Indian education.

We have witnessed in recent years a marked development of scientific education in India. It received a decided impulse in the period of your own Viceroyalty, Mr. Chancellor, which saw the widening of the horizon of the Indian Universities and the beginning of a new stage in their history. This development, of which you saw the beginning, has advanced with fairly rapid strides. The danger is now that in some quarters this side of study may be so emphasized that we may fall into an exaggerated specialism and again become one-sided and limited in our horizon.

The guidance of this Congress which contains so much leadership and represents so varied an experience, should be helpful to those younger Universities that are endeavouring to lay the foundation of education according to the best University ideals in a land which, in the department of higher education, has imbibed so much of the spirit of the West.

As scarcely any time is left for general discussion, I content myself with these brief observations regarding the situation in our Indian Universities in relation to the question that is now before the Congress.

G. BALDWIN BROWN, M.A. (Edinburgh): If I may say just one word it would be in support of the paper of the Vice-Chancellor. He will remember that, many years ago, we were fellow students together at Munich, and he will be interested perhaps to know that the University with which I have the honour to be connected has lately instituted arrangements by which every advanced student of the Classics, whether he specializes in archæology or not, will have the opportunity of acquiring a broad general view over what we may call the world of monuments. The classical spirit is manifested in three forms: in acts and deeds that are the material of history; in words that survive in classical literature; and also, as a third form of expression, in monuments; and I am sure many will agree with me that the great Roman engineering work, that is also a work of art, embodies the Roman genius quite as perfectly as is the case with, say, Roman law. With regard to Greece, the historian, Edward Freeman, said that the Doric temple was the most perfect expression of the Hellenic mind, because of its perfection of form. I think it is the conception of form that is the greatest gift that Hellas has given to the human intelligence. It was the form-giving power of the Greek mind that constituted the essential subject of that world-famous article on Aristotle by T. H. Green, and there is no work of the Greeks in which this principle of form, with all that it means, is more perfectly embodied than in the great monuments of architecture and of the plastic art. To study these is to come into contact with what is best in the great peoples of antiquity.

TUESDAY, JULY 5.—Afternoon Session.

CHAIRMAN.

THE RIGHT HON. A. J. BALFOUR, O.M., HON. LL.D., F.R.S., CHANCELLOR OF THE UNIVERSITY OF CAMBRIDGE, CHANCELLOR OF THE UNIVERSITY OF EDINBURGH, M.P.

"The Universities and the Teaching of Civics, Politics, and Social Economics."

SECOND SESSION.

THE CHAIRMAN: Ladies and gentlemen, some unkind fate has put me in the Chair on the occasion of this afternoon's meeting. I have consulted the authorities to whom I was bound to pay deference as to precisely what my functions were on this occasion. I asked what Lord Curzon had done in the morning, and I was told that Lord Curzon had made an admirable general introduction to the whole series of meetings which were to follow. That work has been done and has been done admirably. Evidently it cannot be my business to repeat it, even if I could ever hope to equal it. I presume, therefore, that I am expected to confine myself to the topic which will be dealt with by the considered papers which we shall have the pleasure of hearing in the course of this afternoon's sitting. How I can best introduce those papers I am a little at a loss to understand. That civics, politics, and social economics ought to be an essential, even if an informal, part of University work cannot, I think, be doubted. Indeed I suppose that Oxford, like other ancient universities in this land, may claim and justly claim to have educated as large an amount of political ability through the centuries that have preceded the present moment as any institution in the world. If Great Britain has, as in many respects it undoubtedly has, led the way in civic, political and social economics, it is largely due, not indeed to the formal teaching of the Universities, but to the spirit in which our Universities have been conducted. And I suppose the question which the readers of the papers will have to deal with in a few moments rather refers to the problem as to whether we should make the study of these great subjects a formal element in our teaching—and not merely, as in the past, an informal element—and, if so, how the subject can best be treated. That there are difficulties, and almost inevitable difficulties, in making these subjects part of a formal curriculum is, I think, obvious. Political economy, indeed, in the narrower sense of the term has by a process of somewhat brutal simplification at the hands of those who were our teachers, been made a study of such definite outline that it is in many respects eminently fitted for a subject of tuition and a subject of examination. But when you leave political economy in that narrower sense and when you come to such wide topics as civics and politics you touch subjects which seem to spread out—and in truth do spread out—over almost the whole field of human activity, or at all events of human co-operative activity, and it is evidently more difficult to see how they can be a subject for professional teaching or for University examinations. I don't know,

indeed, how it is precisely to be limited. In the happy days of the eighteenth century when everything seemed so clear-cut, so simple, so precise in outline, politics—the science of politics—shared this happy simplicity with other studies. All mankind were supposed to be born alike. The raw material of politics and education was provided by Nature in every country in a similar fashion ; you only had to find the proper mould into which this raw material was to be poured—the proper political mould or the proper social mould—in order to produce the best results. Unfortunately for our ease of mind we don't live in those happy and simple-minded days, and now, if we are to take politics, social politics, in its widest aspect, we have many other things to take into account, owing to the innate differences in the raw material with which we have to deal, and such questions inevitably arise as this : if a particular nation or race has evolved a special form of polity which excites emulation and permits imitation, can that be successfully imitated, and how far can it be successfully imitated by men of different race, different origin, different innate and natural capacities ? Indeed, in speculating on history and on political developments, we are always up against the difficulty of determining how far the course of political development in any country—the political and social development in any country—is due to the innate qualities bred into a particular race, we know not at present how or why ; science has not given us any information on that important subject, but we have to accept the fact and, accepting the fact, the problem always arises, I suggest, whether the course of development which has been followed in any given country and in any given race is due to innate qualities in the people or whether it is a matter of education, an artificial product, a thing which can be equally cultivated, with equal success, in all men, wherever they may have been born, whatever race they belong to ; or whether in principle the institutions are only likely to succeed, or to succeed at their best, among the people who evolved them. That is a very great problem and it touches that other great problem, viz., the innate differences of race among human beings. We are apt to talk of superior races and inferior races, and I suppose there are races of which it would be absurd to say that they are not inferior to the average of mankind—the Aborigines of Australia for example—but with regard to the great families of the human race I don't think the word superior or inferior ought ever to be used ; when it is used it involves, as I think, a great confusion of ideas. What we have to admit, what I think stares us in the face, what science teaches, what observation proves, is that, though there is no question of in-

feriority or superiority, there are unquestionable differences, and one of the great problems is how social science and how political science are to deal with those differences and what modification those differences ought to make in any theories of politics that we may make for ourselves or that we may try to instil into others. I am not going to wander into a topic so tremendous as that which I have ventured to touch on, for I am here, ladies and gentlemen, not to lecture myself, but to preside over the lectures given by other people; and as I propose to suggest to the readers of the papers who are immediately following me that they should be kind enough, if they will, to compress their papers into a length of about a quarter of an hour, as that is the advice which I propose to give, as that is the advice which I hope will be followed, I don't suggest that I should myself break my own precept by exceeding the number of minutes which I allow to others, especially as they will give you an argument and papers far more carefully considered than the few introductory remarks which I have ventured to make to you.

THE UNIVERSITIES AND THE TEACHING OF CIVICS, POLITICS AND SOCIAL ECONOMICS.

First Paper.

"Now, we believe the time has arrived for the principle of association to be solemnly and universally proclaimed, and become the centre of all study, theoretical and practical, which aims at the progressive organization of human societies, to shine at the head of our constitutions, our codes of law, the articles of our faith. And, furthermore, I maintain that the promulgation of a principle which marks out an entirely new direction for our studies is sufficient to constitute, or at least to indicate, a new age, if nothing more."—*Mazzini*, "*Faith and the Future.*"

DURING the last twelve months there have been notable developments affecting the teaching of Politics and Civics in the older Universities. Oxford has established an Honour School of Philosophy, Politics and Economics, because "it is expedient to promote the study of the structure and the philosophical, political and economic principles of modern society." The Cambridge Board for Economics and Politics has proposed alterations in Part II. of the Economics Tripos, which may provide a "coherent system of political papers" and promote "the systematic study of politics."

Facilities for the study of Social Economics in the Universities have also been provided in recent years. For the most part they have been introduced in connexion with courses of training for those who desire to do public and social work. One after another, the newer Universities have thought well to introduce such courses, and in 1919 the University of Oxford established a Certificate in Social Training. The relation between courses in Social Training and the normal work of the Universities varies from one place to another, but the tendency is for it to become closer and for students working for a Social Certificate or Diploma to attend many of the same lectures as those who are reading for degrees. The duration of the courses still falls short of that of the degree student; but in several instances it has been extended from one year to two. The standard of examination is also rising. Meanwhile, Social Economics, first placed in the curriculum for social students, has been accepted in some Universities as a part of the Ordinary and Honour degree courses.

Thus the study of Politics, Civics and Social Economics meets with growing recognition in the Universities. The recognition has come tardily. The Universities have hesitated so to extend their

scope as to admit subjects battered by common controversy. Political Science, indeed, and the History of Political Theory, have long held a high place in Honour Schools of Classics, Philosophy and History. But the same position has not readily been won for Politics, Civics and Social Economics as directly treating of modern problems. For these subjects have received rough usage.

They have, on the one hand, been at the mercy of those who possess much goodwill and little knowledge. And so they have appeared flaccid; they have been despised. The contempt into which they have been brought has never been more clearly expressed than in an official document issued to employers during the war; it emphasized the importance of providing opportunities for technical training for boys, and added that lads of low average ability, unlikely to profit by technical instruction, should by all means be encouraged to attend classes in Politics, Civics, Ethics, Hygiene and Political Economy.

On the other hand, men with special axes to grind have not hesitated to speak with authority on these matters. Propagandists have done much to diminish the prestige of Politics, Civics and Social Economics. Thus, handled by one set of people, they have seemed inchoate; handled by another, they appear only too clear-cut, with outlines artificially shaped to serve set purposes.

The study of the conditions, institutions, and politics of bygone days does not suffer from these disadvantages. Remoteness gives dignity. Dreamers and fanatics may dip into the past for illustration and for parallel, but their scope is not so great when they deal with tendencies which have had their more immediate consequences, instead of tendencies at whose consequences they may make any guess they please. The scholar seldom challenges their guesses; and since society as it exists to-day is their chosen material, he has shown an inclination to shun it and to devote his attention to the past.

Yet for this very reason the matter has become urgent. If the ignorant and the propagandist mishandle and twist to their own uses subjects which, for their adequate study, require scientific training and scholarly treatment, it is high time that the Universities should set them in their proper place. It is, after all, their importance that has led to their being vulgarized; and importance is not a sufficient excuse for neglecting the advanced study of any subject.

It has become essential to study these subjects in the light of the new age. New, not because it has in any sense broken away from the past, but because it contains, as each age must, the cumulated results of the past in proportions, and to a degree peculiar to itself.

Our conditions are new, our social and industrial problems are new ; therefore our political theories, our citizenship, our solutions must be new also. Prof. Sidgwick wrote in 1889 : " I am spending my time in trying to finish a book on the theory of politics with a growing conviction that the political results of the coming generation will be determined by considerations very unlike those that come to the pen of a theoretical person writing in his study." * He was right. It is imperative that we should build our social sciences anew. We have to approach them, not so much from a fresh angle, as from a fresh centre, the centre of to-day.

First among the changes which call for new theories of the State, for new social machinery, is the great size of modern communities.† They have grown so swiftly that men have been unable to keep pace with them in the adjustment of their methods and institutions ; and with their increase in size has come that alteration in character and outlook which great numbers give.

All units have increased, both political and industrial. At home the Government is concerned with fifty million people ; in the Empire we have relations with five hundred million. In industry the same thing has occurred. Where workers were formerly numbered by the unit or the score, they are now often reckoned by the thousand, and in many industries firms employing three hundred men are commonly spoken of as " small."

These things came upon us suddenly. The phenomenal speed at which the population of England and Wales has grown since the Industrial Revolution, quadrupling in little more than a century ; the vast increase in the size of our cities, making the population of Greater London almost as great as that of our total population 120 years ago, changed the nature of our civilization before we perceived what was happening. The aggregation of workers in factories also came suddenly, and the war gave a fresh impetus to it, which will probably have a lasting effect although many of the " factory-cities " are derelict. There have been vast additions to the territory, and the population of the Empire, especially in Africa, during the last half century.

It is a commonplace that great numbers mean something more than the multiplication of units. Methods applicable to a small body of people become absurd and impracticable when applied to many. The referendum may work and work well in Switzerland with a population of four millions, but that by no means proves that it would work with a population of fifty millions. It is possible to carry on a system of consulting every one about

* Henry Sidgwick, *A Memoir*, p. 504.
† *Cf.* Graham Wallas, *The Great Society* and *Our Social Heritage*.

everything when there are but few to consult and few things to consult them about; the consultation is bound to become a mockery when there are many. Every increase in the number of voters lessens the power of the individual vote and gives a sense of impotence to each voter. Rousseau might hope that, in small States, government might be carried on in meetings at which those concerned might express their will by all shouting at once. Such methods of democratic government might be possible in the small, isolated communities he envisaged. They are not possible in the world as we know it. For good or ill we are members of larger groups.

Nor is this all. With the increased size of the corporate body, political or industrial, the outlook of each human being is changed. A different consciousness pertains to the individual who is a member of a large group from that pertaining to one who belongs to a small group. Individual responsibility, if it does not give place to corporate responsibility, is replaced by a sense of irresponsibility. It is difficult for a man to recognize that what he does is of importance when he is one of many thousand in a factory or a union, unless he sees that the fact of contact with other people makes his actions of greater importance than those of a man belonging to a smaller body.

Intimacy of contact is, next to size, the great characteristic of the day. Transport facilities, swift means of communication, have built up a great machinery of contact. Trade between the most distant parts of the world increases rapidly. Much of our labour is dictated by the demands of those we never see and whose language we do not know, for the contact of interchange develops faster than that of intercourse. Statesmen, financiers, men of business of all kinds, act on knowledge of remote events. The " perfect market . . . in which there are many buyers and sellers all so keenly on the alert and so well acquainted with one another's affairs that the price of a commodity is always practically the same for the whole of the district " is often world-wide.*

Great populations have made necessary, and intimate contact has made possible, a rapid growth in specialization.

As our relations with each other become more complex our functions become simpler. Each individual, each factory, each country, tends to economize world resources by devotion to a smaller number of services. Widening our contact we define our sphere. The expert arises when he can gain his knowledge and practise his art in a sufficiently wide area. There must be a certain number of people suffering from a disease for the cure to

* Marshall, *Principles of Economics*, Book III., Chapter IV., § 7.

be discovered and for any doctor to become proficient in the use of it. There must be many people playing the violin for it to be worth while for an expert to invent "wrapping machinery" for violin strings. A School must be large to justify the appointment of teachers who have specialized in particular subjects.

Numbers and contact create specialization. They also bring together people who deal with and have knowledge of things that are alike. Amalgamation arises with specialization. For a while people doing like things may compete fiercely, but their common interests tend to draw them together; the bond between them becomes especially close when they have, or think they have, a common enemy.

Large scale organizations and combinations grow apace. We hear continually of the amalgamation of companies, of the formation of "Trusts." To take one instance, the number of Joint Stock Banks in England and Wales was 104 in 1890, in 1920 it had fallen to 20; that the diminution was due to no relaxation of banking activities is proved by the fact that during the same period the number of branches grew from 2,203 to 7,257 and the amount of deposits from £368,663,000 to £1,961,527,000.

Combinations of industrial and of professional workers grow no less rapidly. The total membership of British trade unions was under two millions in 1899, in 1919 it was more than eight millions. This growth in membership has been accompanied by hardly any change in the number of unions, which was 1,310 in 1899, 1,315 in 1919. Unions have been formed in many industries which had none before, but at the same time local unions have amalgamated with each other to form national ones, and there has also been a tendency for the craft union to be merged in the larger industrial union. The conception of wide organization, national unions, world brotherhoods is not new, but only recently have these things become possible in any real sense. It is significant that 56,000 of the members of British trade unions in 1919 belonged to overseas branches. Still more significant are the international conferences at which labour representatives of various nations discuss their common aims.

While increasing contact gives an ever greater impetus to specialization and amalgamation, we grow more and more conscious of our dependence on each other. Modern civilization hangs on the separation of functions and the interlacing of peoples. Vast populations have sprung up in the confident, if unconscious, expectation of mutual service. To be thrown on their own resources would mean death not only to many individuals but to many large communities to-day. They live by supplying other

people's needs and so inducing other people to supply theirs. In a sense interdependence is safer than independence. It gives each person, each group of persons, numerous resources. The failure of a local crop no longer spells starvation to those who grow it; they can beg, buy or borrow crops from elsewhere. Self-dependence gives not only a stunted but an uncertain existence; up to a point it is clear that the power of drawing on outside resources both enables the standard of life to be raised and gives some promise of its being maintained.

Yet if interdependence diminishes some dangers it is accompanied by others. Now that we live by exchange we fear failure in transport more than failure in production, and since we obtain goods by credit we fear the loss of confidence more than the loss of wealth. A disaster to any part of the machinery of world interdependence may produce world subversive effects.

The gain in safety given by the multiplication of resources tends to be removed by amalgamation which brings them under a single control. The contact that makes it possible for us to draw on all parts of the world for support, economic or political, also makes it possible for those who give that support to make alliances formidable to the outside world. Alliances between nations, associations of employers and employed, may cripple other nations and starve many industries.

Isolation is no longer possible; we live by contact, and any break in that contact is earth-shaking. Hence the importance and the peculiar significance of the League of Nations.

Size and intimate contact with their concomitants of specialization, amalgamation and interdependence constitute some of the new problems we have to face. To them must be added the new standpoint from which we view them.

Knowledge has changed. Not only is the content of knowledge greater than ever before, but the background of knowledge is new.

Sciences have sprung up, one after another, quite unknown to the world of but a short while back. They have brought explanations of phenomena, they have relentlessly pursued cause and effect, they have unearthed truth after truth in the material world. Revolutions in thought are due to them. Profound changes have been wrought in men's minds by the birth of biological science with the theory of evolution. Further changes are being wrought by the study of Mendelism, giving proof as it does of the transmission of characters with the possibility of innumerable variations among the offspring. The discovery that the elements are not immutable opens fresh avenues to the mind. Finally the effect produced on the scientific world by the Einstein theory proves to

the rest of us that here again is something that may change our conception of the universe. The world knew of none of these things before the latter half of the nineteenth century. In this connexion it may be noticed that just as in the political and industrial world barriers tend to break down, they seem to be disappearing in science. The idea of ether was a great unifying conception, and the tendency towards unity is increasingly apparent. It has, in some respects, gone so far as to put a term to extreme specialization, for as knowledge advances, the sciences more and more depend on each other, and an understanding of one cannot be attained without an understanding of others.

The rapid growth of the sciences has changed not only the trend of thought, but the methods of teaching. Huxley, as one of the first members of the School Board for London, influenced the beginnings of widespread education by insisting that "the elements of physical science with drawing, modelling, and singing, afforded the best means of intellectual training." * Writing of advanced education, he pleaded that a "complete theory of life based upon a clear knowledge alike of its possibilities and of its limitations" † could not be acquired without a training in the methods of physical science. And for the teaching of biological science he introduced experimental methods.

Science is not only responsible for revolutions in thought, for the teaching of new subjects, and for experimental methods of teaching, but for great material changes. Scientific discoveries have altered and continue to alter the distribution of population. Their effects are writ large on the face of the earth. To them are due our facilities for transport, our methods of warfare, our means of healing. No part of life is untouched by them.

While scientific discoveries, scientific thought and scientific training affect men in every direction, we have at last begun to study in a scientific manner the exact mental effect produced by these things. The study of the mind, not only of the individual, but of the social mind, is progressing fast. We have ceased to argue as to whether instincts exist or no, but, accepting their existence, try to see where they lead and how people's minds are affected by their circumstances. Psychology is recognized as being of great value in education; the researches of social psychologists are of immense and very special importance to those concerned with the teaching of Politics, Civics and Social Economics. Thus we start from a new standpoint given by new knowledge.

* *Contemporary Review*, 1870. *Collected Essays*, Vol. III. Quoted from *Dictionary of National Biography*.—"Huxley."

† *Ibid.*

If the background of knowledge is new, so also is the chance of obtaining knowledge. For the first time our statesmen have to deal with a nation full of people who have "got" education. It may be but a smattering, but such as it is they have to be at least half a century old to be without it. They are brought into contact with affairs by their ability to read the papers. As far as may be under present educational conditions, their individuality is brought out by a devoted body of teachers. Then for the most part they are thrust, in their working life, into a machine which ignores individuality.

How much industrial ferment is due to this cannot be reckoned. Even a small leaven of education must create immense changes in men's minds towards the world in which they live and the ways thereof, and these changes are of paramount importance for political theorists.

Accompanying, perhaps inciting, the movement towards universal education, and the raising of the school-leaving age, has come democratic government, in so far as such government can be attained by general enfranchisement. The extension of the franchise may do little to make democracy effective, but it at least shows a desire to do so.

The mechanism whereby democracy may have its way has yet to be invented. There are those who urge decentralization, so that the unit of government may be lessened, and each individual feel his will effective in a small sphere. But this does not go far in solving the problem of democratic government in momentous questions which, thanks to our great numbers and intimate contact with other great nations, cannot be avoided. Mr. Sidney Webb suggests separate Parliaments to deal with different types of question, the social and political, so that election issues may be simplified.

Meanwhile democracy seeks other methods of expressing its power. And while Government, moved by democratic demands, tends to intervene more and more in matters with which it once had no concern, organizations not originally political in their nature become inflamed by a desire for democratic expression, and threaten direct action in matters formerly left to the Government. Here, again, problems are becoming greater, because barriers are breaking down. It is true that our industrial functions are becoming more specialized, and we show growing approval of the appointment of experts to deal with political affairs. Yet we also show a disinclination to confine our attention to our own job, and to leave the expert to do his without our interference. It may be that specialization in one part of life creates a desire for variety

in the rest. Or it may be that the growing sense of democracy, combined with general ability to read the authoritative statements of the daily press, gives the amateur a wish to assert his power and a feeling that he is competent to judge of the matters of which he reads.

Further afield the question of racial relations looms large. Here again facilities for contact make difficulties, raise new problems. Nations, once geographically aloof, are brought near. The Pacific no longer makes a powerful dividing line between Asia and America. White and yellow races have to determine their relations anew.

Within the Empire questions arise which are both new and insistent. Democracy is dissatisfied with our attitude towards native races and clamours for alterations. The members of those races slowly coming into touch with Western civilization and Western education themselves make new claims.

Such are some of the features of the world which modern schools of Politics, Civics and Social Economics have as their field of study. Numbers, contact, background of knowledge, education, democracy, racial relations, all are new.

Disinherited scholarly treatment is demanded by the magnitude and difficulty of the problems. No group of subjects stands in greater need of persistent research, of vigorous co-ordinating work, of scientific study. The Universities alone can do what is required. They alone can provide a sufficiently large body of students doing research work, of teachers who, while not concealing their own point of view, give a survey of affairs which enables each student to form his own opinion.

The citizenship of all is acknowledged to-day ; all are would-be statesmen, most desire to be social reformers. Only the Universities can give authoritative guidance. Civics, Politics and Social Economics cannot well be taught by those who have ends of their own to serve, and who, by means of careful selection and elimination of facts, give these subjects a false air of precision. Nor can they be dealt with by those who lack scientific training and so are unable to see the wood for the trees.

Whether definite social training should become a permanent part of the work of the Universities is a moot point. But those concerned with such training are wise at present in inducing the Universities to undertake it. For, until the Universities have sifted and collated facts and made a great mass of knowledge accessible to non-University students, and until they have informed and sent out a body of teachers capable of presenting knowledge in a scientific manner, there can be little adequate teaching of Social Economics outside their walls.

The alliance between Civics, Politics and Social Economics is close. They form a group of sciences in which a knowledge of one is essential to an understanding of the others. In any practical issue such as the recent coal dispute neither the civic, political nor social aspect can be ignored, no opinion can be formed without a consideration of all three. They merge into each other. We may begin by thinking of the social aspects of the case, by considering the conditions of the miners, for the most part members of a straitly segrated, vocational community, and their attitude towards absentee coal-owners. Our minds swiftly and inevitably pass to the needs of the community of which miners and owners form part, and so come to the civic aspects of the question. And the moment we arrive at the point of view of the citizen, the politician is concerned.

The material for these studies is vast. It lies largely in newspapers and bluebooks. There is no material that calls for more skilful handling, more scholarly insight; for newspapers may be the weapons of the propagandist and bluebooks the weapons or the defensive armour of the official. So, the first may give a multitude of conclusions from a minimum of facts, the second a minimum of conclusions from a multitude of facts. Often there is no other source of information for the student who is concerned with tracing the evolution of present events, who desires to find the cause of modern conditions.

For, since Civics, Politics and Social Economics are sciences, it is with cause and effect that those who study them have to deal. They search the past for purposes not of illustration but of explanation, that by the light so thrown on the present more may be thrown on the future. The necessary information exists, but it is widely scattered in the official, industrial and journalistic literature of many countries. An army of research students is needed to collect and sift it, and the direction of their work requires a body of teachers with a supreme capacity for distinguishing values. The work must be co-operative; it is too great to be done in isolation.

There can be no end to the work, for conditions will change and material increase as time goes on. If a body of knowledge is established which is constantly added to by a body of students swift in collecting information, trained in observing current events and in tracing their origin, our minds may learn to march with the times and make calculations for the future. At present events change more rapidly than the general attitude towards them.

Great statesmen and social reformers, men of intellect and

trained ability have with unflagging energy gathered and investigated information for themselves and acted on their conclusions. They might be helped by the labour of others. But it is rather for the sake of those who are not great, whose minds have not been trained and yet who in this complex world cannot if they would help influencing the trend of events, that University research into and teaching of Civics, Politics and Social Economics is welcome.

The Workers' Educational Association and other bodies look to the Universities for teachers; they especially require them in these subjects. For an educated people, gathering its members into great associations, is aware of the profound effect of its actions on the world at large and desires the best means of judging their results.

Organization is forced on us by modern conditions. Instinctive, short-sighted action where large numbers are concerned results in inextricable confusion. As problems grow more intricate they become impossible to deal with except by wide-range calculation. Associated action may have disastrous results if those drawn into it—and their numbers increase daily—are without foresight; since they must act for the future they need the material for prophecy. The Universities alone can safely be trusted with the amassing and imparting of knowledge which is to guide nations of which every member is a citizen, a politician and a social reformer.

L. GRIER.

THE UNIVERSITIES AND THE TEACHING OF CIVICS, POLITICS, AND SOCIAL ECONOMICS.

Second Paper.

In relation to any branch of human knowledge considered as a subject of teaching, one may ask in general, three questions: namely, where, how and to whom it should be taught. There are, of course, other possible questions, such as whether it should, or can, be taught at all. I hope, however, that it is not necessary for me in this assembly to devote any time to this last question, so far as it relates to subjects now under discussion, namely, civics, politics and social economics. I propose to confine myself to the other three questions.

As to where these subjects should be taught, since we are here discussing University education, this question becomes rather one of whether there is any special reason for teaching civics, politics and social economics at Universities, that is to say, it becomes a question of how far these are fit and important subjects for University education. This is a question which I happened to deal with at some length quite recently, in a lecture given at the opening of the present session at the London School of Economics and Political Science on the subject of "Economics as a Liberal Education." I hope I may be permitted, without the formality of quotation marks, to repeat the substance of what I then said.*

It is necessary, at the outset, to go over well-worn ground and to define the objects of a University—that is to say, of a liberal—education. Those objects have been stated by different writers in many different ways. To my mind, they can be summed up most briefly and most comprehensively under two heads: the training of the mind, and the giving to the student an understanding of his environment, so as to bring him into harmony with it.

Just as every citizen in a modern community needs the elementary powers of reading and writing, so every well-educated citizen, that is to say, every citizen who is to count for more than one in the community, who by advancing knowledge, controlling business or government or in other ways, is to influence hundreds, perhaps millions of his fellow citizens, must, if he is to

* The lecture as a whole has been printed in *Economica*, a journal of studies which has just been started by the School of Economics.

do this well, have certain further powers developed in him, such as method, accuracy, power of concentration and a logical habit of mind. To get these, he must submit his mind to mental gymnastics, just as to get strong and efficient muscles he must go through bodily gymnastics. He must learn to take hard mental exercise, even when he thinks it dull or finds it tiring. This mental gymnastics for the training of the mind is not, of course, the peculiar property of any single branch of study. It is given, perhaps, in its most intense form by such studies as mathematics, or the natural sciences with their added advantage of training hand and eye, as well as the mind, in practical experiments, but it can be given equally well in many other fields of study. The subject-matter of those branches of study, which we have to discuss this afternoon, is certainly wide enough to afford ample opportunity for mental gymnastics, whether in following the ramifications of economic theory or the underlying principles of law, in trying to understand the working of the foreign exchanges, or in dealing with statistics. It must be admitted, however, that mental gymnastics is one of the objects of a liberal education, in which economics and politics are not naturally and necessarily strong. It is on this side that it is most important to choose the curriculum carefully, in order to make certain that the man who has taken a course of economics has really trained his mind.

When we come to the other object of a liberal education—the bringing of man into harmony with his environment—there is no reason for even such hesitation or caution as has just been expressed. In this respect, it is not too much to say that economics leaves most other branches of study far behind. There was, perhaps, a time when the dominating element in man's life was Nature, and the greatest dangers to its continuance were the natural perils of which the Litany makes mention : " Lightning and tempests, plague, pestilence and famine." In modern times, the emphasis is altered. The dominating element in man's environment to-day is not Nature, but his fellow men, The main danger to man and to his civilization now comes, not from Nature, but from man's own warring passions and ideals ; his most urgent study is not Nature, but himself. His successful study of Nature and growing power over natural resources, while he still lacks power over himself, are in a sense, only an added peril. The failure, through conflicts on political or economic issues, to make the best of Nature and our power over her, is only too manifest, whether we look to Russia or to Ireland, or consider our own industrial troubles. The nineteenth century, that age which

we have all come to think of as the age of engineering, led the world to unparalleled destruction in the "war of engineers." There can be no more urgent task for humanity than to diminish the causes of internal and of external conflict by bringing about a better understanding of the laws which bind men together and govern their relations as economic and political units.

That is the general argument for emphasizing the importance, at this stage of human development, of the study of economics and politics, not by some specialists only, but as part of every liberal education. It is a reason which will, I hope, lead those who control the policy of Universities to pay special attention to these studies in the years immediately before us, and to secure for them a wider scope in the teaching and examinations, and an adequate share of endowments and grants.

Some elements of economics and politics, however, should not only be part of every liberal education. A more intensive study of them is required for certain classes of persons whose functions are of growing importance in modern communities. The first Universities had a general philosophic faculty; they had, besides this, the specialized faculties of Theology, Medicine or Law, whose business it was to prepare men for the three "learned professions"; in the last century another specialized faculty—that of engineering—has arisen and trains men for one of the most important new vocations. The time has now come to recognize, in the same rank as the old "learned professions" of the Church, Medicine and the Law, a new learned profession of growing importance which may best be described as that of Public Administration, and should be taken to include, not only civil servants properly so-called, but the members and officers of local authorities, the officials of employers and workmen's associations, and members of both Houses of Parliament. Economics and politics should play their part in the general or philosophical faculty. They must at the same time rank separately as a specialized faculty, training men with a particular vocation in view, but a vocation requiring mental capacity and training of such an order as to be given only by teaching of University rank.

This, I hope, is sufficient to say as to the importance of Economics and Politics as part of a University education to-day. I have endeavoured to answer the question *where* these subjects should be taught by explaining why they should be taught and studied at Universities.

Turning now to the more practical question as to how they should be taught; it is clearly impossible to indicate more than

a few points of importance which call for discussion, without attempting myself to give complete answers.

First, there is the question of the precise definition of our studies. The subject of the present discussion is given in the agenda as "Civics, Politics, and Social Economics." I have used hitherto the slightly different title "Economics and Politics." Whatever the title, it is clear that the scope should not be too narrowly prescribed. Economics should not be studied apart from Politics, and neither should be studied without ample recourse to History, and to the historical as well as the analytical method. This point may be illustrated by summarizing briefly the subjects which are, in fact, included in the course for the London degree of B.Sc. in Economics. In the first year, when working for his intermediate examination, the student must acquire the elements of five main subjects: Economic Theory, and its application to the problems of Foreign Trade and Currency; the Outlines of Recent History, General and Economic; Geography; the Political Constitution of the United Kingdom; and either Mathematics or Logic. In his second and third years he has certain compulsory studies—as a rule, more Economics and Statistics; more History; Political Theory and Public Administration of this and other countries; and the History of Political Ideas. He must take one of a list of special subjects, which include Advanced Economic Theory; Advanced Statistics; Economic History; Sociology, Psychology and Ethnology; Geography; International Law and Transport. This is not really very different from the new Oxford Honours School of "Philosophy, Politics and Economics," except, of course, that the first section "Philosophy" is much less strongly represented. It has, however, a place not only in the Logic, which comes into the first year, but in the special subjects of Sociology and the History of Political Ideas, and this place will probably grow.

Second, there arises in many Universities a question of form, which is not one of form merely, but may influence method. This is the question whether Economics and Politics should form part of the training for arts degrees or for science degrees, or for something distinct from either. In London, the problem is solved by giving the degree of Bachelor of Science in Economics, in a special faculty of Economics, and with a quite separate body of teachers from those engaged in "Science" as such. There is, indeed, no more than a nominal affiliation to the natural sciences. Yet the name is not without significance. It stands for the view that Economics, if it is to be studied profitably, must be studied more by the methods of science than by those

of philosophy or the arts ; more by the observation of facts and the alternate reaction of observation and hypothesis and less by purely deductive reasoning, or by æsthetic appreciation. Economics has to learn some of the lessons of the natural sciences, and in particular the lessons of avoiding a premature attention to deduction and so to reasoning on insufficient premises.

A third point to bear in mind in framing the curriculum is to be certain of including a fair proportion of studies sufficiently severe and intractable to afford a real mental gymnastic. There is always a danger that political theorizing, or history, or even economics, may be thought to afford something like a soft option for people whose brains are unequal to the labour of thinking hard and logically. One way of avoiding this danger might, indeed, be found in pressing the view that if economics is a science, it should have as its basis, like other sciences, mathematics, whether as applied directly to problems of economic theory or in the form of statistics. I think myself that this would be taking too narrow a view. One must recognize that to many brains of the finest type, mathematics is entirely alien, and that a rigid insistence upon the study of such a subject might exclude from economics, which, if it is a science, is of all sciences the most human and one most needing sympathy and imagination, many persons admirably fitted by these qualities to advance this branch of knowledge. In London we actually admit as an alternative to mathematics in the Intermediate Course, Logic and Scientific Method. Whether that is completely satisfactory or not, I think it points in the right direction.

A fourth point, and one which cannot more fitly be emphasized than in a meeting such as the present, is that economics and politics are essentially a subject for co-operation between Universities in different parts of the world by interchange of ideas, of students and of teachers. The societies in which we live, and which are in effect the subject-matter of our studies, are spread all over the world. The study of any particular society, with its peculiar laws and conditions, can only with difficulty be undertaken at a distance ; the society itself cannot be brought across the sea to a central laboratory in London or elsewhere. The benefit of a student who, having taken his first degree in one of the Dominions overseas, comes to study economics as a graduate in London, or to the London teacher who, having learnt economics in this country, goes abroad to continue his studies or to teach elsewhere, is obvious and immeasurable. It is not, I think, without reason that the London School of Economics has always

been so pre-eminently a centre for post-graduate study by students from every quarter of the world.

The last of my three questions is as to the choice of persons to whom economics and politics should be taught. The answer is implicit in what has been stated already. Some element of these studies seems to me to enter into everything that can be called a truly liberal education. A more intensive study is required for all those who are to take a part in Public Administration, or in the control of commerce and industry, or are already engaged in such work. These last words bring out a special feature, which has not yet been mentioned. Economics and politics are the sciences of man in social action ; in relation to them, theory and practice lie close together ; a complete understanding of them rests at least as much on experience as on academic study, and most of all on a combination of both.

It is, therefore, of peculiar importance for the Universities in relation to economics and politics to consider not merely the student who has no other occupation, and can give all his days to study, but also the man or woman who is already past the normal student age, and is earning his or her living in administration or in business. This can be done, and has been done in London, by providing full evening courses for University degrees, as well as special courses of study adapted to those who, without taking a degree, desire to improve their qualifications or knowledge in particular branches. But evening study, though it can be undertaken, and is undertaken effectively, involves a heavy strain and a sacrifice of all his leisure to the student engaged in earning his living by day. It seems most desirable that, at any rate in the public service, a further step should be made in the direction of recognizing that the continued education of Civil Servants in matters bearing upon their work is a matter of interest to the State, which employs them, and that provision for it should accordingly be made, in part, at least, in their ordinary working hours. A student who, in place of having to concentrate all his lectures in the evening after six o'clock, could take some of them in the early or late afternoon, would very shortly, I am sure, be a far better Civil Servant.

There are two further points, which it is only possible to mention, in the hope that something may be said of them by other speakers. One of these is the extent to which, in order to prepare for University education, any preliminary training in Economics and Politics should be given in the Secondary Schools. There is clearly room for something to be done in this direction with the senior boys and girls, but I am not inclined to press the suggestion

very far. The other is as to the extent to which Economics and Politics can, through University extension or such bodies as the Workers' Educational Association, be effectively taught without the normal preliminary education.

I have not attempted in the foregoing to do more than set out a few general considerations, in the hope that they may stimulate individual delegates to speak of their own special experience. There can be no question, either of the demand on the part of students for extended teaching in Civics, Politics, and Social Economics, or of the need in the interests of humanity as a whole, of advancing the study of these particular sciences.

W. H. BEVERIDGE.

THE UNIVERSITIES AND THE TEACHING OF CIVICS, POLITICS AND SOCIAL ECONOMICS.

Third Paper.

THE main point in the task devolving upon Universities is to perpetuate the whole of moral and scientific knowledge and to diffuse it through the masses by the medium of an *élite* thoroughly prepared and active.

This they have endeavoured to do, from the very moment of their establishment, by training above all cultured men. The epoch did not lend itself to the specializations now admitted. In those days, the student, when through with the University teaching, adapted himself to some function, and achieved success thanks to general ideas which are energetic leaders. Professionals became specialists at the cost of a lengthy experience. The modern world has thus known great thinkers, famous jurists, renowned statesmen, scholars, innumerable artists and technicists—for the most part, admirable citizens. This form of training was not as bad as one would be inclined to believe, nowadays, when general culture is discredited if not entirely neglected. In former times, the specialist remained what he was: a man of thought. Besides his executive ability, he brought to the service of the community a keen interest in public welfare together with the benefits resulting from his generalizations.

In the course of the nineteenth century, events have forced upon Universities a new orientation. The revolution born of the progress of English industry, one of the most conspicuous facts in the history of the world, has given rise to the economic movement which characterizes our times. The evolution has been, in the first place, the result of empiric proceedings, a few of which have not yet disappeared. Later, method developed and became general. It was realized that scientific organization was necessary in the fields of industry and commerce and that the superiority of certain peoples was due to their native qualities increased tenfold by an appropriate teaching which proved to be a discipline.

Science left the heights for the laboratory and invaded Universities, even those which had stood for centuries. The number of professional and technical schools increased where the teaching of commerce as an art was specialized, so were the practice of affairs, the fitting and management of factories and even the various trades. Everything was made scientific, perhaps to

excess. Each and every one desired above all to be practical, to accomplish quickly and in quantities. The secret of rapid and immediate success was demanded of teaching. With the aid of economic ideas, people turned their attention chiefly to accelerating and spreading progress without pausing to consider the consequences. The sudden growth of the economic movement covered social reactions. Creative energy impassioned the world.

Immediate results and material achievements had so deeply borne upon the will of nations that the century, made great by science, had nevertheless forgotten, through daily contact with the marvellous, the importance of scientific function at least in economic production and in the organization of enterprises. For a long time, official doctrines have known none but the three traditional factors: nature, capital and labour. Of spiritual capital, accumulated, like the other, through centuries, nothing was said, and labour, ill-defined, meant merely the effort of performance.

Invention and its continuities in the pursuit of enterprise, leadership and its fundamental directions occupied but very little place in treatises. And classic, political economy has itself cemented the base of labour-value whence came Marxian socialism which gave to theory all the force of sentiment. Fortunately, these errors in the *début*, these omissions through lack of analysis, are not irretrievable. The part of the inventor and producer as well as that of the scientific manager are to-day in the limelight. Intellect recovers its rights. Students in Political Economy have distinctly laid emphasis upon the economic function of science. Civilization can be defined: the progress against all the forces of nature, and each step of this conquest is for a large part the result of brain-work and of the enlightening influence of intellect. Human activities, construction, operation, maintenance, administration, are dominated by the brain-workers striving with the assistance of the physical workers, but never will useful manual work be done without the helpful guidance of will and reason.

The war led us to more discoveries and gave rise to pre-occupations of a still more elevated order in the sphere of teaching. This is the culminating point of the evolution: the immediate problems are at hand. Does it not seem like a reflection of our epoch that one of the questions asked at the very opening of the first after-war Congress of the Universities of the Empire be precisely one relating to the teaching of Civics, Politics and Social Economics?

Human societies have been deeply impressed by the Great War. In political spheres, the solutions of peace have not yet acquired a character of absolute stability. Nations are uneasy and unquiet.

International relations are not definitely scaled. It is felt that the problems which the war has revealed exact a renewed study. On the other hand, the social question clamours insistently. The military hostilities are apparently followed by a social revolution whose prodromes are already in sight. An unrest, inevitable but singularly alarming, threatens to give rise to the violent reactions of a Commune with the entire world as a theatre. Such apprehensions bring back to our mind the citizen, active unit of society, artisan of the future.

In the midst of general anxiety, Universities cannot remain unconcerned. In fact, they have not waited to set before the nations a line of conduct. They have performed works and formulated doctrines, and especially since the conclusion of peace, they have come forward to be of service to nations.

Civics.

More than ever, the nation needs citizens who consciously recognize and accept social duty in its entirety. The complexities and dangers of our civilization whose predominating feature is the pursuit of comforts and wealth ; political equality and the accession of the entire nation to the direction of public affairs ; the repercussion of the economic development which has brought on other miseries and has affected man in its vitality, exacts from every member of the community the reaction which stops excesses, corrects evils and safeguards the moral principles of society. The admirable success of human enterprise must not make us lose sight of the common good.

Individualism is the characteristic of our day. Emanating from past centuries, the ideas which have led to the liberation of the individual, to the gratification of his desires, to the exaltation of his strength, have played the part of catalysors in an atmosphere which scientific discoveries had wonderfully prepared. Around those ideas, our social *régime* is built. Personal interest is proclaimed the great incentive of human action, and the world has been committed to unrestrained competition in which victory belongs to those who are best organized. Teaching has followed this path. It has striven above all to train men of action, practical men ready to succeed in their profession or trade, armed for immediate success. Our Universities have thus given to society increasing numbers of specialists.

Æsop's old saying regarding the human tongue can be equally applied to personal interest, competition, individualism, practical sense, specializations : they are at the same time good and bad

things according to what man makes them. His is the task to realize their value to the utmost. Specialization is a necessity which is justified by the extent of human learning. Dilettantism is a thing of the past. Proficiency which is acquired only at the cost of a long study is like a consoling ransom to scientific progress. Everything is learnt, the most humble trade as well as the complicated profession which accepts a master only after years of severe frequentation. Superiority can everywhere be attained: it crowns a degree wherever may be its place in the social scale. The exigencies of life which followed peace recovered maintained the economic activities up to the time when a steady increase in prices caused the crisis of liquidation which we endure, but the inner source of this activity has been in no way affected. Pro fessional teaching inaugurated during the past century must therefore remain. Everywhere efforts are made to complete it by scientific researches so as to palliate, by a rational utilization of strengths and energies, the modifications brought about by legislation in the hours and administration of labour. Thus it would appear that the work begun should be logically continued.

Specialization thus considered is but the social application of the principle of the division of tasks admirably brought out by your great Adam Smith from the very first pages of his *Wealth of Nations* which remains, even in our day, a discovery; but it must not be exclusive, or premature, or absolute. It was the explicable error of our times to seek it for its own sake, to isolate it in some way and to demand of it the solution of all future problems. Thus stripped, nothing is visible but the springs of an admirable mechanism adapted to one service alone, incapable of generalization. Experience speaks for itself, and the very ones who most insistently claim training by scientific teaching admit that the mere pre-occupation of trade cannot lead to civism nor, as one of them says, produce a single virtue.

Specialization shall be preceded and accompanied by a deep general culture at College, so as to train citizens who will spread civic morals which are but the flowering of morality and ensure the beaming of the *élite* on society. The man who knows his trade, who possesses thoroughly all the means of action of his profession, decidedly serves his country in his own place. In the final addition, he is a unit whose worth I do not undervalue. Without him, the social objective—the conservation of strengths, for example, or the utilization of knowledge—would not be reached. But is it enough to execute perfectly? Does proficiency take the place of conscience? Instruction must prepare for life, such is the common saying; and, already, in the year

1895, Brunetière rebelled against the narrow and utilitarian side of such a formula. I accept it, on one condition: that of considering it in its own true sense. Instruction must prepare for all of life. This means that it will be social. The *élite* is not created with instruments alone. It knows and it serves. It receives a double function which adds itself to the professional function; this is the civic function.

Nowadays especially, when society looks up to the heights to fathom her future leaders, this is the end which should be sought in any teaching, be it superior or secondary—a more complicated task, indeed, but so much more vivid and undoubtedly fruitful.

Every one is called to civism. To the forces which are the life of the individual are superadded the energies that protect and continue society. The seed of these energies must be in the will. "If you love your country make of yourself a good citizen." This thought of an ancient marks the regard in which was held the citizen in olden times and the important part of personality, character, proper direction and supervision which entered into his formation. You hear of military service: civism is social service, and, like the former, it is a result rather than a formula if it originates from training in common, from discipline shared, from long moral preparation. Education already supplies that in the family and in the atmosphere of example which concentrates the attention of the growing child. But the family is the image of its head, and the atmosphere is constituted by successive generations. In vain shall we expect serious results from such heads and generations if their minds have not been imbued with those general principles which forge men and prompt spirits. No matter how we look into it, we always return to this fundamental assertion. Civism is like a moral radio-activity which arises from hidden energies dwelling in the inmost recesses of the heart. Empiric decrees, utilitarian arguments, occasional endeavours, partial reparations, tardy commands, all that is artifice.

What is it that will give us, beyond the family circle and the primary school where those thoughts retain their value, the general culture propitious to the dawning of civism? Total humanism made of literature, of science and, above all, of philosophy.

For a long time, strife divided teachers on this point. Supporters of a genuine scientific instruction blamed literary men and historians for stopping short at the thirteenth century, and literary men lamented that scientists wished only to be of their time. Experience seems to have quieted spirits. From all sides there is a return to the source of humanities which was kept alive

by England herself, under the arches of Oxford, as in remote epochs, the Romans preserved the sacred fire, symbol of the transmission of life. It is not without a deep satisfaction that I am able to affirm that French-Canadians have never abandoned it.

Literature gives to the man of to-day, solicited by a thousand distractions and dominated by the desire of short and rapid realizations, the marvellous balance-weight of the thought of centuries. We speak with effusion of natural resources, of the fertility of the earth, of mines and forests, of water-falls where millions of powers pass like a shiver. Humanities are natural riches for human intellect. A very indifferent practician he would be who would refuse to cultivate them. They bring to us the wisdom of time, the lessons of the generations which have preceded us, and the certainties of triumphant nations. They are like an uninterrupted reflection which our intellect resumes and pursues. They alternately supple the mind and fortify the will. They point towards action. Moreover they bring to us the worship of expression and the love of art. And no one can deny that we need these two things to save our civilization, so sadly made uniform by machinery, so soon intoxicated by mere palpable conquests. Therefore, let us treasure classic humanities as we treasure radium laboriously extracted from tons of matter.

I admit at once that letters find in sciences a necessary complement. They have actuality and tend to truth, which is better still. To the citizen of to-morrow they recommend observation, methodic and precise, moderation, succession in ideas and the just appreciation of facts. They have not the aridity usually dreaded by the vulgar if to them imagination is hypothesis; reason, a scepticism ever renewed; will, a rule severe in research; sentiment, an irreducible patience. They have a past which adds itself advantageously to that of letters, which offers to the student the history of human progress and the victorious experience of labour.

Those are grand lessons. Of themselves, they would, unfortunately, lead to an excessive mandarinism. It would be useless to memorize grammatical rules and genealogies as well as to accumulate nomenclatures or the whole series of chemical reactions. Teaching lives by philosophy and generalizations, by synthesis which becomes a doctrine, one, sound, inspirer of our acts, constant and sure principle of our will. Philosophy nurtured by tradition is not surprised at true progress if it is at its origin and continuity. Speculation of the intellect, it rules, directs, and commands. The teacher will build on this broad basis, the only

one which is worth while and which will stand the test. Anxious to mould characters, to train citizens, he will know how to bring out in good time, from thought or fact, the forces which lead to what the ancients so nobly termed virtue and demonstrate that the stability of human societies rests on the acceptation of transcendent truths, divinely instituted, to which science itself, if interpreted as it should be, counsels obedience.

It has been said that one could not philosophize on the square of the hypothenuse or on the " formation of doublets in the French language." Still, everything in teaching should be a pretext to formation. There is nothing useless but that which is lessened by the very fact. The phenomenon is never isolated. Weighty with certainty or hypothesis, it always awakens the idea which has created it and thus centres universal reasoning. There are directives everywhere, and the whole thing is to make them burst forth through comparison. The teaching of classics attains in this way its full efficiency and becomes highly practical. .This is ultimately the true preparation for life, the open path to a teaching socially irradiated.

I know of the efforts which have been made to teach even in High Schools what has been long called " Community Civics," or what may henceforth be named " Social Science " or " Vocational Civics." I equally approve the idea of utilizing even in secondary teaching, and more than it has been done so far, History and Geography for social ends, and to organize, in Philosophy classes, a course of Politics and Social Economics ; but I am anxious above all to examine here what would be the best foundation to citizenship. I seek a basis without which I should fear to see the most elaborate preparations give way. Literature reveals the concentration of thought of humanity, and science manifests the expansion of its productive forces. Blended in one doctrinal philosophy, these two powers are already action. The cultured man shall henceforth find in himself reasons to submit and to sacrifice to it. This is civism.

This formation which tends to create men of responsibility may seem trifling and useless if means alone are considered. What is the use of reading a page of poetry or knowing the history of a defeat ? Of what avail would it be to the lawyer to have discerned the elements of a cell ? But taken as a whole, judged by its fruit we are amazed. The young man who possesses it is mature for specialization. As in biology, the individual is constituted by the differentiation of elements originally alike, he can rush forward and succeed. He does not crystallize. He has received, to speak in modern language, a master-key of uniform model, but distinc-

tive, however, by certain trait more accentuated which will permit him to open the doors on all careers. For the issue would not be worth much which would simply confine the *élite* to a few. Present ideals claim that the selection of the fittest should be more and more extensive. Classical culture, no longer a luxury, is to be adapted to our present needs through the practical sense and intelligent handling of the teacher and a more pronounced insistence on scientific training. Thus understood, no reason stands against her setting the path to almost any profession.

It is a fact asserted by numerous testimonials from the most practical countries as well as from the most idealistic nations. It is a fact which the war has in some way sealed. If science has triumphed, it is because it has been guided by reason and prompted by sentiment. At the very time and place when all seemed lost, the spirit of invention and the effort of meditation reconstituted victory. You know these words of Foch: "While Ludendorff deployed strategy, I philosophized." By this sign he conquered.

Politics.

General culture leads to the threshold of a profession. Extending her teachings farther, the University offers her students the varied scope of specialties. A few of them choose the art of Politics or the mission of social worker: two comparatively recent specializations.

The secular attitude of Oxford proves that, to form a citizen with a broad mind and a generous temperament, it is not absolutely necessary to direct him towards strictly appropriate studies. The fecundity of pure classicism is such that, knowingly utilized, it can produce educated citizens of an imperial democracy, fit for the duties of leadership in public life, as a Fellow of Balliol College observes. These citizens will naturally have the curiosity of actual problems and the concern for the public good because they will have meditated, since the past, on the perpetual recommencements which reveal, through History, the persistency of human sentiment. Even while at College, and at the Clubs they belonged to, they have already exercised their dialectics and foreseen their future career.

But Schools of Political Science and Sociology have been organized in several Universities. After 1870 and with the avowed purpose of giving to France a means of rapid restoration and to assure her an element of prestige, Emile Boutmy founded at Paris the Free School of Political Sciences, of which I am proud to be a graduate. The event has confirmed Boutmy's dream. In the

last fifty years, this School has been a most important asset. In administrations, at Parliament and even at the Presidency of the Republic it has recognized numbers of its pupils. I might mention besides the Schools of Political Economy of Oxford, Cambridge and the University of London, other institutions of the same kind established in England and throughout the Empire, where Politics are the subject of uninterrupted studies, a few of which have been very successfully orientated since the war. Germany has found out that these pre-occupations have failed her, she who prided herself on having established the first school of Political Economy. In fact, had she mastered the psychology of nations as well as their economics, she might not have as easily risked the stake which she placed on a world she had not known how to penetrate.

I think we all agree to approve of this solidly baited educative movement. My only intention is to acquaint you with a few considerations relative to this mode of teaching.

It is evidently out of the question to introduce into the University domain the spirit, methods and the thousand worries of present Politics. Wherever this has been done, the consequences have been grievous. In this instance, the principle of separation of powers may be applied. The actual politics may not have any educational value, and political action, which may sometimes be a salutary experience, is not always a school. The doctrine of a party has nothing necessarily transcendent. It is, in this case, only the creed of a certain number, and there is no particular reason why it should impose itself, there even where judgment is enticed to find nobler motives of determination. This doctrine may be simply an adaptation to circumstances: it then offers little more than a discipline of attack or defence. If we can conceive the confessional University receiving the custody of a traditional doctrine, we cannot admit the University whose sole mission would be to make commandments of the occasional, fickle and questionable politics of a government.

Quite a different matter it is to prepare leaders who will take the direction of political and social movements. If I do not believe in politics exerting an undue influence over the University, I deem it a capital thing that the University should have an indirect action over politics and a strong grasp on the public spirit. Firstly, because it is not out of place that leaders should receive a University training and again because it is essential that an opinion be elaborated and expressed outside of Parliament. More than ever the solution of actual problems is at that cost. Unfortunately, it very often happens that an opinion is more powerful because it

is poor. From a social if not from a political point of view, it behoves the University to supply it with a direction that does not go astray. This is where should be centred the action of the press, of conferences, clubs, societies in which ferment disinterested ideas, formulated for the good of the collectivity, preceding by a long way legislative or political action, which are nevertheless thrown to the public, where, becoming sentiment, they will pass into a vote.

Schools of Politics are therefore a great help. You know the breadth of their programme where the evolution of human civilizations passes. It is with great satisfaction that those who are initiated experience, year after year, the scientific display of these institutions and observe the manifold ramifications which such schools can bear. They prepare to mostly all public careers : superior functionarism, administration, diplomacy, parliamentary functions, economic or social directions. They give to the country the requisite competencies ; and there remains to be wished that the country will know how to utilize them. The basis of their teaching is what may be generally termed : Political institution. The following subjects are successively taught : Politics, political and constitutional history, public finances, parliamentary and administrative law. To this nucleus is added according to local pre-occupations and circumstances a series of odd courses, from social economics and geography to statistics, taking in, when necessary, certain aspects of commercial, customs and agricultural questions.

What does this experience of a few years suggest to us ? What more can we ask of these schools, now that the world suffers the manifestations of a social unrest, distant in its origin but rendered more acute by its demands, following the clash of the Great War ? The glimmering of these tragic events has traced for us a line of conduct in which the Universities are already engaged.

The importance which social questions are taking will cause social philosophy to occupy a more and more conspicuous place in the programme. The bond between politics and social problems is too close to permit those aspiring to power or desirous of governing public opinion to neglect what power owes to the masses, or what the masses wish to force upon opinion. The social problems can be rendered less acute through expedients, but some day it will be realized that they can only be solved by the application of a doctrine whereby each one's rights and duties are respected.

As to politics, methods are apparently modernized. Universities are more and more concerned with actuality and the compared study of civilizations.

The University cannot abandon actuality. It is true that it is, for a great part, a question of opinion ; but it constitutes a live experience, the only one which political science can afford. The teacher is of his day. Accordingly, treating of current events, he will first tell his pupils of his preferences, generally known by his public attitude, and then expose with great impartiality the theses which he deems proper to oppose. Actuality can, moreover, be left to lectures or discussed in the course of mock debates, from which the moderator will carefully exclude all irrelevant or passionate discourse. Debating is to the School of Political Science what the Commercial Bureau is to the School of Commerce : a means of testing, by a sort of practice, the abstractions of teaching. But in the past, Politics have been chiefly taught with the aid of History. It is a sure fact that politics of olden times which the student desires to know for comparison can only be studied on this condition. Method, however, was nevertheless incomplete. Whether facts were too strictly adhered to and ideas not sufficiently, or whether time, antecedents, causes, surroundings, were being neglected, the proper impression was not produced, the soul of history was not reached. It was to be feared that resistances remained unexplained, which the future might rouse ; the action of the sentiments as well as racial mysticism were left ill-defined, which nations might have to face some day. Has not the war revealed the influence of these imponderables ? Nations whose past had long been searched did not know themselves. To their history which had been written it appeared all at once that certain elements were lacking.

It was resolved to search better. To History were added Religion, Political Economy, Geography, Anthropology, Ethnology, Sociology, Languages, Legislation, Statistics and the compared study of institutions and morals. From the precisions brought out by these different sciences, somewhat scattered so far, it was intended to form a revealing whole which would demonstrate with more surety the fundamental characteristics of a nation or group. This process is applied in a few American Universities, especially in Columbia, and, quite recently, in clearly determined purpose, in the courses arranged at the teaching institutions of the University of London in imperial studies. This collaboration of the science of man, moral being, which can be realized as easily, by taking down a few of the partitions which divide the Faculties and Schools, is full of promise, and has in store for political teaching, thus widened, a magnificent future.

Moreover, scientific research, successfully applied to physics, chemicals and natural science, can be extended, within all reserves, to the study of Politics and Social Economics. Harvard has organized a Committee on Economic Research, Washington possesses a School of Sociology ; everywhere seminars exist, in which, as it is said in the calendar of the University of London, " the student is taught how to use the apparatus of documents, books and statistics that serve for him the same purpose that the balance, the blowpipe or the microscope serve for the student of natural science." Singularly fruitful and efficient teaching in which the teacher devotes himself entirely : mind, method and experience ; where the lesson is seen to pass into reality. To research pursued in laboratories or seminars is added a means of vulgarization which is being developed of late : the University Extension that spreads teaching at large and even within hearing of the multitude. As far as social science is concerned, this mode is particularly interesting. The exchange of professors going from one University to another to make known the results of their researches, and giving to strangers the benefit of their experience, is indeed a novel extension. I do not know of a better means to acquaint distant people with the true national characteristics. Perhaps even yet we shall see the establishing of international teaching as it already exists at Brussels and Paris, whose Institute of Higher International Studies has just been inaugurated, and at London, where, in 1920, was founded the Institute of International Affairs.

From the utilization thus understood of the sciences directed towards man, will result a broad philosophy of the history of nations, a psychology of people and groups. What has been done by the University of London for the Empire may be extended to the entire world ; a more profound, exact and complete knowledge of atmospheres, groupings and races, be they minorities or not, is more than ever a necessity. How many hasty and fatal judgments would have been avoided in the past by a more substantial teaching, pre-occupied with causes and reasons rather than with details. A nation, be it ever so small, has its history, its traditions, its memories, its land, its language, its religion, its customs, its pride, and these are forces which should not be ignored and rights which should not be undervalued. Henceforth, the study of nations must, in politics, be directed towards the whole of their history which comprises as much sentiment as apparent logic, if peoples are to stop tearing each other to pieces, whilst science formulates, with haughtiness, the sentences of a too brief erudition.

Social Economics.

The same complexity and the same acuteness characterizes the social problems towards which our anxious eyes are turned at the present moment.

The social question rises to-day, keener than before the war, and that it should thus persist after such violent commotion, rejecting the blessings of a peace so painfully conquered, is an undeniable proof that it is deeply riveted to the heart of man, ever tortured by the dream of equality. In the lapse of centuries, it has grown heavy according to ideas engendering new worlds, creating systems or converging to the bitter force of sentiment. It is a cruel thought to the sociologist that universal progress should thus be burdened with hatred.

Multiple problems, more special and less extensive, caused by social repercussions of certain economic phenomena, rise in the depth of the same social question which governs if it does not absorb them entirely. They are, properly speaking, the social problems: alcoholism, depopulation, desertion of the land, surpopulation, diseases of societies and so many others which attack the happiness, even the life of the proud civilized beings that we are. A dreadful solidarity unites mankind in the same sufferings: the contagion of evil spares nobody. From individuals, it pervades masses, then people. No one has a right to ignore to-day what may be the lot of all to-morrow. Social problems are of the greatest interest to the moral serenity as well as to the physical vitality of societies. Therefore, it is easily imagined that Universities have been for a long time studying these problems, philosophizing on the greatest of them, giving to all a minute attention and solutions which those they have trained are already preconizing and spreading successfully. The University teaching has found therein one of its most beneficent orientations. I value the action which it has caused in the elevated spheres of philanthropy as much as the results attained in applied and natural sciences.

The University has had recourse to two excellent means: special culture superadded to professional preparation and, as in politics, specialization. There only remains to be sought if University work, thus established, may in the future be developed in the sense of its origins.

Every man has a social duty to perform, but the professional man more than all others. Becoming one of the *élite*, he has the mission of guiding those who are directly dependent upon him, if not even those who approach him and look to him as an example.

This is, as I have already said, what I call the social function, the radiance of purely professional activity.

The University is aware of that, since she has on the programmes of her special schools courses of social and political economy, hygiene or industrial legislation. It would be necessary to still broaden this fortunate initiative. To prove it, I shall only take three types of professionals: the lawyer, the physician and the engineer.

It appears as though, from all eternity, the lawyer has been called to politics. The wonder is that this subject is not always taught him. The same as the students in the Faculties of Commerce are familiarized with social and political economy, commercial politics, public finance, likewise the lawyer must decidedly learn the great questions of economic and political actuality if he is to continue to strive with more educated competitors, and if he is to bring to the practice of his profession something more than the knowledge of text-books where the custom which causes legislation is already fixed and death-like. The social lawyer, if I may so express myself, is a specialist which society calls for.

The physician sees his profession broadened every day. Is he not a social worker in the full acceptation of the word? What a grand unit in life for good! He extends his clinics to all the social works. In the city as well as in the country, he is at the outpost in the fight against contagion. Not content with healing, he has invented prophylaxy. Thanks to him, disease can be braved. This is why it seems natural that the sureties of social philosophy should be revealed to him at the University, so that he may possess, from the starting point, the high reasons of his apostolate.

Can the multiple functions of the engineer be better revealed than by the words written by Vauban: "There is no perfect engineer, because one must be at the same time carpenter, mason, architect, painter, orator, politic, soldier, good officer, and be especially gifted with a kind heart, a good spirit and a long experience"? If we weigh these words, strange as they may appear at first reading, we cannot help but find them very just. The engineer invents, directs and performs. He is intelligence, an essential, perhaps the initial factor of production. Unfortunately, the work once executed and materialized covers the spirit which has conceived and conducted it. It is a tort which should be redressed. The engineer also fights and counsels. He is near the employer and the employee. Officer, to quote again Vauban's words, he must become a soldier. Therefore, he is one of the men who must be most completely trained, and I believe this has not always been done. If I were allowed to revise the programmes of

the schools of civil engineering, I would willingly insert lessons on finance, organization of modern enterprise, and I would ask more of the courses of social and political economy, of applied social science and of industrial legislation. Let us not forget that the engineer, when through with the University, enters immediately into the social conflict.

Next come the specialists : men of thought and action, sociologists or social workers. The University has given them admittance, and in certain places she shelters them sumptuously. Schools of Sociology are multiplied here and there. Timid at first, they already assert themselves in great centres. It is plain that the solicitude of the University is in that direction. The connexion between the chair and the social worker effects itself gradually. And this, I think, is one of the greatest merits of contemporary teaching which finds here its only logical end.

These schools differ from those of political science inasmuch as they immediately bait practice. Indeed, it is to be wondered what should be their theoretic teaching and under what conditions will practical action give its whole value.

Political economy and economic history have a place at the base of these specialized studies, but they are vivified and completed by the imposing *ensemble* of social philosophy. In the past, the economist has readily become a sociologist : he carried out in application the principles which he had formulated. Social and Political Economy was then taught. In consequence of labours whose importance I fully acknowledge, Economics has constituted for itself a sort of theoretic field, independent, solely preoccupied with what is, insensible to what should be, committed only to the scientific determination of laws, leaving to the sociologist the concern of results and the elaboration of synthesis necessary to action. This semi-classic doctrine, presumptuous and haughty, seems to lose the prestige which is being gained by sociology so intensely developed of late, and by economy reinstated in its rights to be a social science.

Economists have too long neglected sentiment and moral responsibility, which both abide by man, and have revealed themselves, during the war, such powerful incentives. It is consequently a happy return. Charles Mills Gayley, the brilliant professor of Berkeley, defines it poetically in his *Idols of Education* : " Taking fresh heart of ethics, economics wears a new and most seductive smile. No longer the minimizing of material cost, but the maximizing of vital value, she regards. She seeks the psychic income, the margin of leisure for the soul, the margin of health for the body ; the greatest of national assets—true wealth of nations."

More affirmative and still more direct is the testimonial of Mr. William Caldwell, professor at McGill : " We could never get that training in moral and social habits that is required by all our citizens until ethics and ethical considerations enter more definitely and more organically in our schools and academic systems than they do at present. Japan and France, he added, could teach us important things in this regard." I have also found these noble pre-occupations in the English, French, American, and even German economists—particularly Leipzig's professor, William Roscher. I cannot mention them all, but if I exclude religious writers of whom this is the fundamental theme, two famous contemporaries appear to me to have accepted the scientific worth of morality : Charles Gide, the eminent professor at the University of Paris, and the very one whom Gide calls " the Prince of Economists," Alfred Marshall.

Thus conceived and practised, economics will help to solve the social question and the social problems which are moral as well as, if not more than, economic questions. We will admit it some day when experience will have wearied us : it is men we must reach and hearts we must change. This is the inappreciable advantage of a doctrine, just for the powerful, as well as for the weak, preaching the rights and duties of each, animating in all the social sense, awaking at need the bitter satisfaction of individual interest sacrificed for the salvation of all. Some English compatriots have repeated that the old Province of Quebec would not flinch at the invasion of revolutionary ideas, and that, in the midst of order respected, she would preserve her secular intentions. She owes this incontestable truth to the firmness of her traditions and to the morality of the teachings she has received.

These declarations enlighten us on what should be the characters of practical action assumed by many Universities in the guise of field work.

Again University teaching elbows reality. Social workers associate with institutions : hospitals, settlements, protection work of all kinds ; with social and economic centres : factories, popular meetings, Parliamentary Houses. No laboratory is more vast or more interesting. The social clinics thus attended by social workers have been intelligently organized and distributed according to the particular work which the student desires to take up later on. This is all well understood. Let us not think, however, that field work will solve everything and thus exaggerate its educational value. It sets down the problem of exclusive specialization : it is not sufficient to form a practician, clever in handling slips or in conducting inquiries. The mind guides the hand. I

value the schools where the teaching of sociology suggests field work, but I prize, above all, those that ask of the students registered a strong general culture. The truly cultured man will rise above his daily task. Serving social works, he will be anxious to spread, to promote, to ramify them. His thought will animate meetings where these grave problems will be discussed. He will become a social head powerful over opinion.

Separated from the Laval University of Quebec last year, henceforth independent, the University of Montreal has first organized a School of Civics, Politics and Social Economics, where those who have received a classical culture will be able to prepare themselves for public action. From the very first year, thirty-two steady pupils have registered and 160 auditors have attended the course of social hygiene. The school has been divided into three sections, namely: the political, the social, and journalism. The first year is devoted to subjects of general interest, and specialization does not take effect before the second year. From the start and throughout the whole course, which lasts three years, social philosophy is taught. The University hopes thus to produce an *élite* who will be ready to give directions in the triple field of politics, social action and journalism.

The teaching given to the social section is principally theoretical. The directors of social works are invited, between the regular lessons, to come and explain the manner in which their institutions operate, and visits complete these lessons taken from practice. The section is therefore intended for those who are interested in the *ensemble* of social questions. Every year, professors and pupils take part in social weeks which are a sort of congress where the great problems of actuality are put down to study. The University believes that students thus trained will, when necessary, adapt themselves to executive work. Besides, this preparation, by its doctrine, answers to our actual needs. The question is chiefly to determine the movement. Our parochial *régime*, which shelters numerous communities, guarantees to our population the services of charity and supplies society with thousands of social workers, so that the field for social action which the future has in store for the University is immense and full of promise. In the meantime, and as a bait, our Commission of Studies, in accordance with the Executive Committee, have decided to establish courses of Hygiene for each of our Faculties and Schools, and to organize a theoretic and practical course for the visiting nurses.

To the University of Montreal is also affiliated the Loyola School of Sociology, which was founded three years ago. A practical school, its programme aims at forming social workers by

the study of philosophy, economic science applied to the social problems caused by our civilization, industrial legislation, statistics, and by two years of field work in the very midst of the numerous social institutions of the city of Montreal.

We thus step in the action common to all Universities who have accepted the mission of elaborating and guarding science so as to spread it in the heart of collectiveness. In this manner, they fulfil a double function of thought and action, and this is what they ask of individuals. They are logical, and they preach through example. It may be that the beneficent influences which they exert are not sufficiently realized. The University initiative is often at the base of social reorganizations, through scientific research pursued in laboratories, lessons and solicitations from the Chair and the constant effort of competencies which have been prepared by years of studious life. Laws come later which only sanction these teachings, and, in the nation, power receives the merit of a work which has been piously carried out by others. Far be from me the thought of recriminating. My only wish is that Universities may unite themselves to reveal to the great public all the beauty of University work, insufficiently known, and to give it the place it should rightfully occupy, in the heart of civilization which it protects and magnifies.

EDOUARD MONTPETIT.

Discussion.

PROFESSOR W. CALDWELL, D.Sc. (McGill): It is with all due modesty and yet with an element of confidence that I rise to attempt a possible contribution to the discussion of this important subject, the proper teaching of social economics, and so on, in the University. I have the honour to appear before you as a returning Britisher and as a Canadian delegate who looks back with feelings of untold gratitude to twenty-five years of early life and training in this country and on the continent of Europe, and now to twenty-five years of academic experience in the United States and in McGill University. My general point of view in regard to this whole matter of social science, and the turning out of Socialists and social reformers, is substantially one which I endeavoured to indicate some years ago in a London monthly.* It is that the social and political sciences are all of them branches of philosophy, and that no student should be allowed to take work in sociology (either theoretical or applied) without adequate preliminary training in general history, and then in the special sciences of ethics, economics, sociology and introduction to philosophy. The more we study the sociological movement of modern times and liberal and reform movements and their results, the more do we become convinced of the grave error, and of the danger, of allowing students to take social studies too early in their careers, or of allowing any one to speak and act with regard to the social problems without the acquisition of a sound philosophy of life, and without a sound personality in themselves, and without an active sympathy with the great fundamentals, institutions of society, the family, the school, the workshop, the Church, and so on. It is unnecessary to develop this any further. Still, until this matter of a sound philosophy of life and a sound conception of the relations of one's own special calling becomes the property, not only of the students of sociology, but of professors in Universities and of academicians, the proper teaching of sociology in Universities is not in sight of a satisfactory solution. Nor, would I add, is the great problem of the organization of human knowledge itself, for human knowledge can never be perfectly and finally organized, unless there is a satisfactory and a satisfaction-bringing organization of our actual and potential activities as human beings.

Now, as to the boundaries between the Secondary Schools and the Universities. I venture to say that it is impossible to think of secondary education to-day apart from the social or the citizen

* Philosophy and the Newer Sociology. *Contemporary Review.* 1898.

point of view. We University men are here to-day partly as teachers of the Empire and partly as citizens of the Empire. We are the latter in so far as we try to organize our subjects. We all regard our particular subjects from the point of view of some University, or some State, or some Province. So I think that secondary education to-day should not be considered apart from such things as the present disorganization of our modern world, the Continuation Schools of Europe, the demands of practically all the Colleges on this side of the ocean for instruction in social service, and apart from the great matter of the training of teachers. It seems to me important that teachers for all educational institutions should have had some instruction from the social point of view. One of the most misleading of all the figures of modern liberalism and modern education is the idea of the " ladder " from the School to the University. Now, contrary to all this sort of thing, it is in the Arts faculty of the University that provision should be made for future advanced study. Only a few boys in any School can go to the University, and it exists mainly for the training of leaders. And in advocating the adoption of the sociological point of view in secondary education I speak in the interests, too, of the freedom of the University. If it is free from the mere continuation work of the School, it is free to develop along the lines of what we may call the great continental idea of a University. I have gained the impression that too many Universities on this side and on the other side have for some time been actually competing for students, and that too many Universities have been trying to add endlessly to the number of their subjects. There is a reaction even in the United States. Of course, when Universities limit the number of students then the work of the organization of knowledge among Universities becomes possible. I do think this sociological point of view in secondary education would do away with many contradictions in our intellectual life, and that a sound constructive attitude on the part of the Universities of the overseas Dominions will work towards this desired end. I have thus said a few words about the spirit in which I think sociology should be taught, and about the way in which it should affect the teaching of the School and the University.

PROFESSOR PRAMATHANATH BANERJEA, D.Sc. (Calcutta): The extension of the frontiers of knowledge is, of course, the primary aim of a University, but this is not, and can never be, an end in itself. That end is the promotion of the welfare of society. Now, there are very few subjects more closely related to human well-being than Civics, Politics, and Social Economics. It appears

strange, therefore, that these subjects did not, until recently, form a very important part of the scheme of studies of a modern University. The cause of this neglect was twofold. On the one hand, Politics and Economics were considered by the University authorities as subjects too profane to find a place within the sacred portals of a temple of learning. On the other, there was hardly any demand from the side of the public for their inclusion in the academic programme. These subjects were regarded as crafts which could be learned by mere practice. Besides, an academician was in those days looked upon with mingled feelings of awe and suspicion by the man in the street, and a wide gulf separated the world of the University from the world of affairs. During the last three or four decades, however, there has been a gradual change in this respect. To-day, the Professor of Political Science is tolerated, if not respected, by the practical statesman, and there is a greater disposition on the part of the man of business to seek guidance at the hands of the economist. The distance between the scholar and the man of affairs is also tending to disappear, so that professors are now proving themselves capable statesmen, and men of business are making substantial contributions to the advancement of knowledge.

The Universities themselves have not been slow to respond to the call. The American and continental Universities were the first to bestir themselves in this matter. But, of late, these studies have made rapid strides in the United Kingdom, and the arrangements which now exist in the University of London compare very favourably with those in any other country in the world. Nor have India and the Dominions lagged very far behind. Politics and Economics now find a place in the curricula of almost all the Indian Universities, and in this particular branch of the Post-graduate Department of the University of Calcutta there are no less than seventeen teachers and no fewer than one hundred and twenty-five students.

The popularity of these subjects thus seems to be growing, and this is just the right moment to examine the benefits which are expected to accrue from a study of them. Of course, the two most obvious advantages are that they provide the necessary equipment for citizenship in a modern State and fit our young men for careers in public life, in the various services, in industry, and in commerce. Important as these advantages are, to my mind, their fundamental importance lies in this—that it is only by the aid of these social studies that we can realize the true relations which subsist, or ought to subsist, between ourselves and our fellow beings and shape our lives accordingly.

A few words may here be said about the necessity for providing instruction in these subjects in the University. The question is often asked, Is not practical experience the best school for teaching these subjects ? The answer is—Yes and No. Experience is, of course, essential ; the study of Politics and Economics can neither be real nor complete without practical training. But experience by itself is not sufficient. A man's individual experience does not go very far ; he is compelled, therefore, to learn from the experience of others. This means study, and study involves method. Now the chief function of a University is to teach a subject according to the proper method. Observation and reasoning make visible what cannot be seen by the unassisted eye. Political and economic questions are so complex that it is difficult to penetrate below the surface of things and notice the hidden forces. And the business of the student of Politics and Economics is, to use the words of Mr. L. L. Rice, " to discern, and to assist others to recognize, the unseen." Another circumstance which greatly helps the academic investigator in these fields is his relative detachment. Not being directly and personally interested in the result of his investigations, he is able to discern the whole truth, while interest or passion often clouds the vision of the man of affairs.

The problems of society are impossible of solution without the aid of principles. Mere empiricism in administration or industry may lead to undesirable, and even dangerous, consequences. But principles are the outcome of a scientific study, and as society is faced with fresh problems every day, the student of Politics and Economics must be in perpetual quest of new principles. This research may take the shape of a comparative study of facts and circumstances in different countries and at different ages, or it may aim at the discovery of new devices for overcoming political and economic difficulties. If great discoveries have been possible in the domain of the physical sciences, there is no reason why patient thought and diligent work should not lead to the exploration of new avenues for the employment of our physical and mental energies or the invention of new remedies for our social ills.

" The object of a University," observes Bishop Creighton, " is that it should be the testing-place of all ideas as they are framed, and that it should appraise them and put its stamp upon them before they filter through to the public mind." This, indeed, is work of great value. Proper study teaches the serious student how to distinguish the true from the false. It also tells him how far economic and political ideas are relative to time and circumstance.

But even more important is the testing and appraising of ideals. Economics and Politics are ethical studies, and, to make them fruitful, motives and ideals have to be taken into account. But, unfortunately, the tendency has always been to ignore them, and it is this fact which has led men of thought and judgment to regard Politics as a " gruesome study " and Economics as a " dismal science." A narrow view at present prevails in society of our duties in the political and economic spheres of life. Not to speak of the ordinary citizen, even the leaders of society are groping in the dark. " Politicians," says a famous contemporary writer, " live from day to day and statesmen from event to event." Few of them have an abiding faith in the creeds they profess, and fewer still consciously follow any definite ideals. Such a habit is detrimental to the higher life of the community, for it leads to intellectual stagnation and moral apathy.

But the time has come when we must have a different way of dealing with these subjects. Politics and Economics must be studied not only in a scientific, but also in a philosophic, spirit. What is needed is not mere analysis, but also synthesis. These studies must infuse into the minds of men ethical motives and inspire them with high ideals. A philosophic view cannot fail to widen our mental and spiritual horizon and persuade us to discard many of the motives and ideals which have so far guided our activities. Social studies are barren unless they point out the true relationship of the individual to mankind. Many centuries ago, the sacred books of the Hindus taught the oneness of the individual with humanity, and human brotherhood is one of the cardinal doctrines of Christianity. This great idea should not, however, be confined to the sphere of religion, but must permeate all the social sciences and help to give new form and shape to our political and economic life.

It is a hopeful sign of the times that a change is beginning to manifest itself in the views of men. The great catastrophe of the war and the almost equally great catastrophe of the peace have set men's minds in motion, and it is gratifying to note that at the present moment great thinkers of all countries are devoting their attention to this great question. The imperative need of the hour is, indeed, " a bold reconstruction of our outlook upon life." And in this work the Universities, as the great thought-organizations of the world, must help. Universities, to be true to their name, must aspire after universality. This, in fact, was the aim of the ancient as well as the mediæval Universities. But modern Universities are in a much better position to fulfil their task. It is true they cannot take action. But they can advance and spread

knowledge, and knowledge leads to action. Lord Haldane would feel inclined to go further and say, " knowledge is action," for knowledge " does not leave its world as it finds it."

If the study of Civics, Politics and Economics is pursued in the right spirit, a brighter and better day will dawn upon the world. The reign of hatred and rivalry will cease, and love and service will become the mainsprings of human action. A new social order will evolve itself, and humanity will march in peace, harmony and freedom towards its ultimate goal of fulfilment.

THE UNIVERSITIES AND SECONDARY EDUCATION.

First Paper.

My chief qualification for discussing this problem would appear to be that I have failed in rather a conspicuous manner to find a solution of it which commended itself to any one in my own country. Nevertheless I have studied it closely for more than a quarter of a century, and I doubt very much whether many people have had such opportunities as I have had of gaining an intimate acquaintance with every aspect of it from both sides, the side of the Schools and the side of the Universities. I suppose that was why I was elected to the Chairmanship of the Scottish Universities Entrance Board, but I soon found that my views were not appreciated by that body, and I have therefore felt it my duty to resign my membership of it, so that I may be free to advocate the reforms I believe to be necessary. I should like to add that this is not merely a local squabble. If it were, it would be an impertinence to mention it in a Congress like this. The questions at issue are such as are bound to come up for settlement elsewhere, if they have not done so already, and moreover, it is of the utmost importance that they should be settled on similar lines throughout the Empire. I suppose we are all agreed that any attempt to impose a mechanical uniformity on our Universities is to be deprecated in this as in other matters, but it is true all the same that the fundamental principles on which such questions should be decided are the same everywhere, and it is only if we are agreed on these that the system of mutual recognition can operate with the least possible friction. It is just the vagueness which prevails as to these general principles that is the source of all our troubles. The scheme which actually seemed to find most favour with us in Scotland is one which would have made mutual recognition impossible even between England and Scotland. It did not look beyond the border at all, and in that respect it might have been conceived in the fourteenth century. I think it, therefore, most opportune that the question should be raised before this Imperial Congress. Though local in its origin, it is of world-wide import, and it is one with which every state of the Empire must be faced sooner or later.

The situation in Scotland is this. For a generation now we have had a School Leaving Certificate, and this, subject to certain restrictions, has been accepted as entitling its holder to enter the

Universities. It must not be supposed, however, that this certificate resembles in any way the Certificate of Maturity of the Higher Schools of Germany or those other countries which have adopted the German system. That is really a certificate issued by the School itself, though under the control and oversight of a representative of the Ministry. It is essentially an attestation that the work prescribed for the nine years' course has been satisfactorily performed, and the award depends mainly on the schoolmasters. The Leaving Certificate Examination of the Scottish Education Department, on the other hand, is just an external examination like another. The same written papers are set for all the Secondary Schools in the country, with the result that no account can be taken of the actual work done in each School, and that the Schools are compelled to adapt their teaching, not to what they consider the best standard from an educational point of view, but simply to the standard of the external examination. The only modification which this statement requires is that the Department has before it in adjusting its results the schoolmaster's estimate of the pupil's progress. That, however, does not in any way affect the fact that the School is deprived of all educational initiative. In different subjects, this works out differently. It is possible that such a method of examination may work fairly well in Mathematics, and it has already been recognized that it cannot be fully applied to scientific subjects, in which a practical examination is actually held at the Schools themselves. It need hardly be said, however, that in all literary subjects, such as English and Classics, the system is necessarily fatal to good results. It practically penalizes the teacher who tries to lead his pupils to the appreciation of a great work of literature as a whole in its proper historical setting, and I have no hesitation in saying that the Leaving Certificate Higher Grade Pass in Latin, for instance, attests nothing more than a very low standard of merely linguistic proficiency. History and Literature and all that makes the study of Latin worth while it simply cannot touch. I am not blaming the Department for this. If there must be external examinations, I think that conducted by the Department is as good as one is likely to find anywhere ; I only mean that it has set before itself an impossible task, and that the educational value of the work in the best Secondary Schools, and consequently in the Universities, is much less to-day than it was when there was no examination at all.

Now, it was hoped that it would be possible to take advantage of a new Ordinance, which was being framed to regulate admission to the Universities, to restore educational liberty to the Schools,

and to substitute a test depending mainly on the teachers' record for this deadening external examination. A Conference was held at Edinburgh in October, 1917, presided over by Lord Haldane, who represented the Scottish Universities Committee of the Privy Council, and there the Secretary of the Education Department expressed his readiness to make the necessary modifications in the system of awarding Leaving Certificates. The following form of words was agreed to on behalf of the Universities and the Education Department :—

" The object of the foregoing suggested arrangement is to raise the level of the Secondary Schools, and to free their curricula from the deadening effect of the system of external examination as distinguished from that of a test by record of the pupil, based on the observation of his teachers during a full course of study. To-day the course of study has to be subservient to the external examination, instead of being the main consideration in education."

There were some of us who regarded this paragraph as marking an epoch in the history of Scottish Secondary Education, but no sooner did discussion upon it begin than it appeared that hardly any one attached any particular meaning to it, and the only proposals that were even discussed were all based on the old idea of external examination. That is just because the fundamental principles which ought to regulate this matter have never been settled.

We hear much of the influence of the Universities on the curricula of the schools, and of course it is very great indeed. We hear less of what is at least equally important, the influence of the Schools on the curricula of the Universities. It is surely clear that both these influences are legitimate up to a certain point, and it is also clear that if we are to make any progress at all, we must start by trying to determine what that point is. We shall probably find that each side will have to give up something which it considers desirable in itself, but that is the condition of smooth working in all human arrangements. We shall also find, I think, that both sides are entitled to insist on some things without which their own work would be rendered ineffective.

The Universities require in the first place some guarantee that the students who come to them shall have received a good general education. No one will question that. On the other hand, it is not the business of the Universities to prescribe even in outline what constitutes a good general education. That is a matter for the Schools, subject to the approval of the Education Department. Now, as it happens, the Scottish Education Department's practice

in this matter is extremely liberal. While it recognizes what it calls a Normal General Course, and does not require any curriculum which conforms to this to be specially approved, it also acknowledges that there may be individual pupils or groups of pupils in a School for whom something rather different will be more advantageous. In this respect, as it seems to me, our Department pursues a far more enlightened policy than is usual in most European countries, and the Universities have certainly no interest in trying to limit its discretion in any way. On the other hand, it is surely obvious that there may be Special Courses, as the Department calls them, which are unsuitable for University purposes, and which ought not to be recognized for such purposes, however excellent they may be in themselves for the class of pupils for whom they are intended. There are, for instance, Special Courses in which Domestic Economy is the chief element. Besides, the Department's hands would be much tied in granting recognition to such courses if it had to consider in every case that it was *ipso facto* admitting those who took them to the University.

The truth is that we are too apt to forget that only a minority of the pupils in our Secondary Schools will ever go to a University at all, and that there are many forms of general education which may be quite appropriate for those whose education is to stop at the age of seventeen or eighteen, but which do not happen to include certain subjects which, from the University point of view, are fundamental. It would be intolerable, on the one hand, to impose on all the pupils of a Secondary School restrictions which may be quite justifiable in the case of those who are going on to the University, and in that respect the Schools are quite right to insist on their freedom. On the other hand, it would be equally intolerable to expect the Universities to take so wide a view of what they require from applicants from admission to their courses. That would lead to one or other of two very undesirable results. It would either, as Sir Henry Hadow put it at the Congress of 1912, make the Universities like the establishments one sees in Paris with *Entrée libre* over the door, but where, though it costs nothing to go in, it costs a good deal to get out; or it would compel the Universities to undertake a great deal of elementary teaching which is not their proper business, and which, as resources in men and money are limited, would so far diminish their power of doing advanced work and research. Even as things are, many students come to the University who have had a School course of such a kind that it is almost impossible to find a suitable graduation course for them, and yet some of these are very good material. With a little forethought they might have been started on lines

which would have led them to distinction. I am convinced, then, that the Universities are entitled, and indeed bound, to ask for something more than a bare attestation of a good general education, and the only question is what this something more shall be.

In the old days, when the Faculty of Arts was the necessary preparation for study in any of the "superior faculties," the question was not hard to answer. There could not be much doubt as to the knowledge which was necessary as a preparation for profitable study in the Faculty of Arts. Now, however, the Faculty of Science has been invented, and it is strictly co-ordinate with the Faculty of Arts, while the Faculty of Medicine (which presents problems of a special kind) is also open to undergraduates except in one or two of the older Universities. As the necessary minimum requirements of these Faculties are quite different, it would seem to be altogether hopeless to institute any common conditions of entrance to them. At any rate, this would involve the requirement of both Mathematics and Latin from all candidates for admission to the Universities, and the Schools seem to feel this too great a burden nowadays, though it is interesting to observe that the best educational opinion in France is tending to adopt this solution after nearly twenty years of optional Latin. Assuming, however, that we cannot insist on Latin for the Faculty of Science or on Mathematics for the Faculty of Arts, the only course left for us seems to be a differentiation in the requirements for these two Faculties. There is not the least chance of the Universities consenting to admit students who know nothing of Latin and nothing of Mathematics. The Scottish Entrance Board proposed, indeed, to make this possible, but the four Scottish Universities unanimously rejected the proposal, as might have been expected, and it is not likely to be renewed. It is apt to be forgotten that the Universities have a duty to maintain the academic character of their work on a level recognized as adequate by the Universities of other lands. They are European and Imperial, as well as national institutions, and they would cease to be anything of the kind the day they consented to take students who would be rejected elsewhere. It would also be an act of cruelty to the students. A student who is admitted to a University has a right to assume that the University is prepared to see him through if he has ordinary diligence and ability, and it is very certain that it cannot fulfil this duty properly if he comes to it ignorant of the essential things, any more than the Secondary School could do its duty by pupils ignorant of the three R.'s.

I have no doubt that this will be generally admitted in the case of Mathematics, so far as the Faculty of Science is concerned; the

real trouble is likely to arise with regard to the requirement of Latin for the Faculty of Arts. Now there is a good deal of misunderstanding about this, which ought to be cleared up. In the first place, so long as students are admitted to the Faculty of Science without Latin, there is no hardship of any kind. Indeed, now that we have Faculties of Science co-ordinate in every respect with the Faculty of Arts, the proper policy is to differentiate them as much as possible. It is quite wrong that any one should be able to take two degrees for practically the same work, and we ought to be sure that every one whom we authorize to write M.A., B.Sc., after his name should really have the double qualification he claims. In the second place, it is important to realize that the requirement of Latin in the Faculty of Arts is not specially in the interest of the Classical Department. Students who are going to take Classics will of course do Latin at School. The point is that it is really impossible to teach the other subjects included in the Arts Faculty, at any rate on a University standard, to students who are ignorant of Latin. That is simply because the civilization of Western Europe has, as a matter of history, taken a certain course, which it is impossible for us to alter at the present day, and which we can only ignore at our peril. I do not know whether the question has ever been approached in the same way elsewhere; but, as Dean of our Faculty of Arts, I felt it my duty to put the question directly to the Boards of Studies in English, Modern Languages and History in my own University, whether they regarded a knowledge of Latin as essential for students entering their departments, and these Boards replied with complete unanimity in the affirmative. That is the opinion of all the teachers in what are called "modern subjects" in at least one University, and it is sufficiently striking. I may add that, in my opinion, this belief is likely to become more fixed than ever, now that the interdependence of all these studies is coming to be felt more and more every day, and that they are all seen to be rooted in Latin. A study of English or French which does not recognize this fundamental truth may have its uses, but it has no place in a University curriculum.

But, having secured this, I think the Universities would be well advised to stop there. The requirements of a general education are something quite apart from these special requirements, and the less the Universities meddle with them the better. It is particularly undesirable that they should attempt to set up anything of the nature of a Normal General Course, even with wide options, at a time when the Department is just shaking itself free of such trammels. I believe firmly myself that it is most desirable that

every Arts student should know some Mathematics or Science, and also that every Science student should know some language, preferably Latin, if only one is taken. But it does not follow that these subjects should be pursued up to a point which can properly be recognized in a Leaving Certificate, and I am certain that the Universities have no business to meddle with anything less. I think, therefore, that the possibility should be kept open for pupils who have no natural bent in one or other of these directions to drop them altogether and take something else instead. But this is a matter with which the Universities have nothing to do, so long as their own minimum requirements are satisfied.

I do not know how far this brief sketch of the problem with which we are faced in Scotland may be of service to those who have to deal with widely different conditions. The whole tendency of the time seems to be to substitute School Leaving Certificates for University Entrance Examinations, and I cannot doubt that the tendency is a wholesome one. But surely nothing can be gained by retaining what is really an external examination and handing it over to an outside body. Indeed, if there is to be an examination of this kind at all, the Universities are far more competent to conduct it than any Government Department can possibly be. The question is a more fundamental one than that. It is whether we cannot get rid of external examinations at this stage altogether.

In my opinion, the best plan would be this: Let each School frame its programme or programmes of general education in perfect freedom, subject only to the condition that it obtains the approval of some competent authority, which may be either a Board of Education or the regional University. Let its pupils be tested mainly on the School's profession of work, and not upon something else. It would of course be necessary to conjoin some representatives of the Central Authority with the teachers in the Schools for the purpose of carrying out this test (which might be largely oral). That is necessary, because it is unfair to throw the sole responsibility for this on the teachers. Only on some such lines does it seem possible to find a way of escape from our present difficulties, which tend to grow greater every day.

JOHN BURNET.

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THE UNIVERSITIES AND SECONDARY EDUCATION.

Second Paper.

The Influence of University Requirements upon the Curricula of Secondary Schools with Special Reference to the Position in Scotland.

In this paper I propose to discuss three questions, viz.: (1) the present position of the Scottish Universities in regard to the Leaving Certificate of the Scottish Education Department; (2) arising out of this discussion to indicate how the difficulties, which at present exist between the entrance requirements of the Universities on the one hand, and the demands of the Department upon the Secondary Schools on the other, are intended to be solved by the recently enacted ordinance regulating admission to the Universities; (3) to sum up by considering the general nature of the relation of the Schools to the Universities, to set forth certain general principles, which, in my opinion, ought to guide the Universities in their entrance requirements, and to point out how these requirements influence, or may influence, the curricula of the Secondary Schools. This problem is of a much more simple character in Scotland than in England, since the four Scottish Universities are required, by ordinance, to have a common preliminary or entrance qualification. Before, however, entering upon an account of the place of the Leaving Certificate of the Schools as an avenue of entrance to the Scottish Universities, it is necessary to point out, that, at present, there are three ways in which a candidate may enter upon his course of study at a Scottish University or in any particular Faculty thereof. He may enter by the presentation of a Leaving Certificate, which, as regards the subjects and the standard of pass, conforms to the requirements laid down by the Universities Entrance Board; or, he may enter by passing the Preliminary Examination of the Board; or, having obtained a certain number of passes in his Leaving Certificate, he may supplement this by taking the remaining subjects at the Preliminary Examination. Thus, *e.g.*, a student who fails to obtain a full Leaving Certificate at the School examinations held in April of each year may complete the entrance requirements, by taking the remaining subjects at the September examination held by the Entrance Board. As a rule, pupils who have attended a full course in a Secondary School enter, either by

means of a Leaving Certificate, or by the completion of the Leaving Certificate at one or other of the examinations held yearly by the Entrance Board. The full Preliminary Examination is taken, as a rule, by students from outside of Scotland; or by students who have not had an opportunity, for various reasons, of attending a complete course at a recognized Scottish school. One other position requires mention since it brings into contrast a demand made in the new ordinance regulating admission to the Universities. At present a candidate is obliged to pass in all the required subjects at one, or not more than two examinations, provided that he may offer himself for re-examination as often as may be necessary to satisfy this condition. Thus, he has unlimited time to qualify for entrance to the University. Under the new regulations, as we shall see later, the one mode of entrance for all Scottish candidates who have gone through a full Secondary School Course is by the obtaining of a Leaving Certificate which conforms to any general regulations laid down by the Entrance Board. As a consequence any pupil who fails to obtain the requisite certificate must remain at school until he does so, and cannot, as at present, supplement a defective certificate by the Entrance Board's Examination.

The Leaving Certificate of the Scottish Education Department.

In order to understand the function which the Leaving Certificate performs in the Scottish system, it is necessary to say something of its character. Two certificates are granted by the Department: an Intermediate Certificate witnessing to the completion, after leaving the Primary School, of a three years' course of higher education. Fitness to proceed to this stage is tested by a qualifying examination. The attainment of an Intermediate Certificate, except in a few specially approved cases, is a necessary preliminary qualification for entering upon the Leaving Certificate stage which extends over, at least, two additional years, so that the minimum Secondary course extends over five years. In many schools, and especially in schools preparing pupils for the Bursary Examinations of the Universities, an additional year is added, making the full course one of six years. As regards the nature of the curriculum, that for the Intermediate Certificate is uniform. All pupils are required to pass in (1) English, (2) a foreign language, (3) Mathematics, (4) Science, and (5) Drawing, although weakness in one or more of these subjects may be compensated for by excellence in others. Much criticism has been

passed on the rigidity of this curriculum. In particular, it is pointed out that many pupils have no aptitude for drawing, which is taught from the artistic point of view. Again, it is held by some, that little real scientific teaching is possible in these early years, and that pupils would profit more by an extended study of mathematics, or of a second language, and in some cases the latter is attempted. At the later stage, more concentration is allowed. Every approved post-intermediate curriculum must provide for the continuous study throughout the course of not less than *four* subjects taken from the following list :—

English.	Mathematics.	Any other subject
Latin.	Experimental Science.	specially approved
Greek.	Geography.	by the Depart-
French.	History.	ment with refer-
German.	Drawing.	ence to the par-
Italian.	Music.	ticular curriculum
Spanish.	Domestic Science.	for which it is
Gaelic.		proposed.

Every approved curriculum must, in all cases, provide for the study of English throughout the course, with History as a subsidiary, but not separate subject; of a language other than English; and of Mathematics or Experimental Science, the remaining subject or subjects being any of those above enumerated. The course which includes English, a language, and either Mathematics or Science is regarded as the Normal General Course. On the other hand, curricula which fail to include a study, on the higher level, of (*a*) a foreign language, and of (*b*) either Mathematics or Science, must be submitted for the special approval of the Department. Such special courses are extending in number, and allow for specialization, *e.g.*, in Languages, or in Mathematics and Science. It is further to be borne in mind that the Leaving Certificate serves other purposes than admission to the Universities : it is one avenue of entrance to the Technical Colleges and other Central Institutions of the country. Its main object, however, is to certify to the completion of a satisfactory course of Secondary Education, and in many cases, the successful candidates make no further use of the certificate gained. Thus, of 1,739 pupils who gained the Leaving Certificate in 1913 (the latest year unaffected by the war) 961 are known to have entered the University, while 319 are known to have enrolled at Central Institutions. This probably errs rather on the side of under-statement, since a number of students entered the Training Colleges for Teachers by means of the Leaving Certificate, and it seems prob-

able that some of these took a University course concurrently with their training, or subsequently entered the University. In the same year 118 pupils left Schools under the control of the Department, and were known to have proceeded to the University. In most of these cases, candidates completed the entrance qualification by the third of the methods described above. It is also to be noted that any Intermediate Certificate until the present year was accepted, in lieu of the Medical Preliminary Examination, provided that it included the four subjects required by the General Medical Council, viz. :—(1) English ; (2) Latin ; (3) Mathematics ; and (4) an additional language. Thus, in addition to students entering the University by means of the Leaving Certificate, many students also qualified for entrance upon a course in Medicine by the possession of an Intermediate Certificate embracing the above four subjects.

As showing the growth in the numbers taking these certificates, I append a table showing the number of schools presenting pupils for (1) the Intermediate Certificate, (2) the Leaving Certificate ; the number of pupils presented at each stage, and the number of passes recorded from the year 1908 to the year 1920. From the table it will be seen that, beginning with the year 1908, when 904 Leaving Certificates were awarded, the number has gradually grown to 1879 in the year 1920, an increase of over 100 per cent. ; whilst the number of Intermediate Certificates granted during the same period has grown from 3,727 in 1908 to 6,717 in 1920. Thus an increasingly larger number of pupils from Scottish Schools successfully complete the full Secondary Course, and, as a consequence, an increasingly larger number of pupils enter the Universities by this means. As regards the standard exacted, it is laid down that the certificate will not, as a rule, be granted to any candidate who is unable, at the completion of his course, to obtain passes in English, and at least in *two* other subjects. The fourth subject need not be so passed, but the candidate, either at the intermediate stage, or thereafter, must have obtained a pass on the lower standard, and the study of the subject must be continued to the end of the course to the satisfaction of the Examiners of the Department. Thus, *e.g.*, a candidate who selects English, French and German as his three major subjects, may, after passing in Mathematics at the intermediate stage, elect not to present himself in that subject, although he must continue its study for at least a further two years, to the end of his course. As regards the normal course mentioned above, the most common choice is (1) English, (2) Latin or French, and (3) Mathematics. In considering the candidate's claim for the award of the Certificate,

comparative excellence in one subject is allowed to compensate for slight weakness in another. The principle of compensation was introduced in 1912, with the consequent result that a larger proportion of the entrants have been, since then, successful in obtaining the certificate. To assist the Department in coming to a decision, the Headmaster is asked to record his opinion of each candidate's work.

Coming now to the consideration of the existing Preliminary Examination of the Entrance Board, the requirements are somewhat complicated, and vary according to the Faculty which the student proposes to enter. For entrance to the Faculty of Arts, each student must pass an examination in the following subjects: (1) English; (2) Latin or Greek; (3) Mathematics; (4) one of the following: Latin or Greek (if not already taken), French, German, Italian, or other approved language, and Dynamics. There are a higher and a lower standard in Latin and in Greek, and in Mathematics, and candidates must pass on the higher standard in at least one of these subjects, and may pass on the lower standard in either of the remaining two. Hence, *e.g.*, a candidate presenting a Leaving Certificate in English, French, German and Lower Latin or Lower Mathematics, is not eligible for entrance to an Arts Course until, at least, either the pass in Lower Latin or Lower Mathematics is converted into a pass on the higher standard. In the Faculty of Science, there are three grades in Mathematics: a higher, an intermediate, and a lower. Mathematics on the higher standard is essential for degrees in Pure Science and certain Applied Sciences, but candidates may take Mathematics on the intermediate standard instead of the higher, provided they take an additional modern language on a lower standard as a fifth subject. The other difference between Arts and Science as regards Entrance qualifications is under (2), where French or German on the higher standard may be taken in place of Latin or Greek on the lower standard. As regards entrance to the Medical Faculty, it is now enacted that on and after January 1st, 1921, the conditions for admission shall be the same as those in the Faculties of Arts or of Science. The difficulties that arise from these two sets of conditions are obvious. Leaving Certificates in many cases have to be supplemented by the candidate's adding to his qualifications an additional subject or subjects before he can enter upon his course for Graduation. In particular, it is a felt grievance that a candidate who wishes to specialize in Modern Languages must pass on the higher standard either in Latin or in Mathematics before he or she can enter upon a course of study in Arts leading to Graduation. Further, the schoolmaster, in the pre-

paration of his pupils, has to keep in mind both the requirements of the Department and of the Entrance Board, and as a consequence has a divided interest.

The New Ordinance regulating Admission to the Scottish Universities for Purposes of Graduation.

This new Ordinance passed in June, 1918, fundamentally alters the character of the entrance requirements to the Scottish Universities, and is intended to bring the Schools into closer and more direct contact with the Universities. Although passed more than two years ago, it has not yet been made operative. This is mainly due to—(*a*) difficulties of interpretation, and (*b*) the hostility of certain members of the Universities to its provisions. In particular the adherents of classical education insist that every Leaving Certificate admitting to the Faculty of Arts shall include Latin, and, as will be evident from what has been said above, such a provision would exclude from the University certain well-qualified candidates in Modern Languages. But the intention of the Ordinance is clearly set forth in the preamble, which declares that "it is expedient that the *normal* test for admission to the Scottish Universities should be the production of evidence duly attested by a competent authority of the satisfactory completion of a suitable course of Secondary Education." Provision, however, is made for admission of candidates who are not in a position either by reason of age, or on account of exceptional circumstances to produce such duly attested evidence of the satisfactory completion of a course in Secondary Education.

The Articles of the Ordinance dealing with admission are as follows:—

"V. The duties of the Entrance Board shall include the following:—

"(1) In the case of Schools in Scotland which regularly present candidates for the Group Certificates of the Scotch Education Department, to determine, after consultation with the said Department, as to the length and general character of the course or courses of Secondary Education, the satisfactory completion of which, as attested by the Group Certificates of the Scotch Education Department, may from time to time be deemed suitable by the Universities as entitling applicants for admission thereto to enter upon a course of study qualifying for graduation in any Faculty; and to frame General Regulations accordingly;

"(2) In the case of other Schools in Scotland, to determine whether their curriculum of Secondary Education is of such a character that evidence of its satisfactory completion, as attested by the Group Certificates of the Scotch Education Department or otherwise, may from time to time be deemed suitable by the Universities as entitling applicants for admission thereto to enter upon a course of study qualifying for graduation in any Faculty; and to frame General Regulations accordingly;

"(3) To determine what Leaving or other Certificates shall be accepted by the Board as qualifying for admission to the Universities in the case of applicants for admission from outside Scotland; and to frame General Regulations accordingly;

"(4) To determine all questions relating to the tests of fitness for admission to the Universities to be required of applicants either from Scotland or from outside Scotland who, owing to exceptional circumstances, have not been able to fulfil the normal conditions referred to in sub-sections (1) (2) and (3), and are therefore unable to comply with the General Regulations of the Board; and to frame Special Regulations accordingly.

"VIII. The Entrance Board shall have power, in the case of an applicant for admission of not less than twenty-one years of age, or such higher age as the Board, with the approval of the four University Courts, shall determine, to grant exemption, in whole or in part, from any requirements laid down in the General or Special Regulations of the Board; but such exemption shall not be granted unless the applicant produces to the Board satisfactory evidence that he possesses a good general education, and unless the Board is satisfied of his fitness to enter upon the curriculum for a Degree.

"XIV. In each University the Senatus may from time to time determine with respect to any particular class the conditions under which attendance thereon shall qualify for graduation, and shall in each case report the conditions to the University Court."

In considering these new entrance requirements, it must be kept in mind that the great majority of pupils in Scotland attend Schools which regularly present candidates for the Group Certificates of the Department; that these Schools are, except in the remote country districts, easily accessible, and that, under the provisions of the Education (Scotland) Act of 1918, Education Authorities have it in their power to assist deserving candidates

to complete a full course of Secondary Education. Hence, it may be safely affirmed that the majority of pupils capable of profiting by a course of Higher Education can, as a rule, have the opportunity of doing so. Now, the intention of the framers of the Ordinance was undoubtedly that the normal mode of entrance of all such pupils to the University should be by the satisfactory completion of a course of Secondary Education, as attested by the obtaining of a Group Leaving Certificate. One main criticism passed against this enactment is that if a pupil fails to gain a complete Leaving Certificate, and is unable, under the provisions of V. (4), to prove exceptional circumstances, such, *e.g.*, as ill-health or some similar reason, he cannot, as at present, enter the University by means of the Entrance Examination of the Universities Board; but must either continue at School until he obtains a full Leaving Certificate, or abandon the intention of entering upon a University Course of study. The second criticism made, or rather difficulty encountered, has already been briefly mentioned. As has been pointed out, the Leaving Certificate is not merely a certificate testifying to fitness to enter upon a University Course, but it is used for other purposes. Hence arises the difficulty of framing a general regulation to include all forms of Leaving Certificate, which, in the opinion of the Entrance Board, testify to fitness to enter the University, or to any particular Faculty therein. As against this, it is maintained that the duty of the Entrance Board is to draw up a list of such Leaving Certificates as, in their opinion, are deemed suitable for admission to the Universities, or to any particular Faculty thereof. But the objection urged against this proposal is that new groups are, from time to time, being approved by the Department; and, as a consequence, the entrance requirements for admission to the Universities might change from year to year. This leads me to say a word or two upon what its opponents declare to be the fundamental objection to the enactments of this new Ordinance. At the present time, the Universities Entrance Board have no control over the Group Leaving Certificates granted by the Department, nor have they any say in the standards of pass accepted. By this Ordinance, it is affirmed, an external authority lays down the conditions for entrance to the Universities; the powers of the Entrance Board being limited to the approval, after consultation with the Department, as to the length and the general character of the course or courses. The attestation of each candidate's fitness is entirely and wholly left in the hands of the officers of the Department. The subjects and extent of the examinations; the method of conducting the examinations; and the standards of pass exacted are entirely outside

the control of the Universities Entrance Board. As I have already pointed out, the enactments of this Ordinance, after more than two years of discussion, have not yet been made operative. On the one hand, within the Universities there is strong opposition to accepting merely a list of approved certificates. On the other, there is the difficulty of framing any general regulation or regulations to which all Leaving Certificates must conform. Some insist upon Higher Latin as a necessary subject in every certificate admitting to the Faculty of Arts. This would involve its inclusion amongst the subjects of School study. Others declare that Higher Mathematics should be a necessary precondition for entrance to the Faculty of Science with a like consequence as regards School study. Thus, under both conditions a boy, at or about the age of fifteen, would require definitely to make up his mind as to his future career and prepare for entrance upon such or such a course of University study. Of the deeper consequence of this position I shall speak later. At the present, however, a deadlock has been reached. Whether a solution of the difficulties may be arrived at satisfactory to the Universities, on the one hand, and to the Scottish Education Department on the other, lies in the future.

As regards the provisions set forth in V. (2) it is to be noted that the Schools outside the control of the Department are few in number, and are attended, as a rule, by the sons and daughters of the better classes. Some of these Schools utilize the examinations of the Department to test pupils in individual subjects, and, occasionally, where parents so desire, present individual pupils for the Group Leaving Certificate of the Department. The great objection of these Schools to the Leaving Certificate Examination is, that it is preceded by the examination for the Intermediate Certificate, which, on account of the width of its curriculum, prevents early specialization, and, as a consequence, is not suitable for boys and girls preparing to enter one or other of the two older Universities of England. Further, there is a suspicion, that by making the Group Leaving Certificate the normal mode of entrance to the Scottish Universities, a lever has been put into the hands of the Department, which may force these Schools to come under the direct control of the Department. But, here again, the framers of the Ordinance had clearly in view that the satisfactory completion of a Secondary School course should entitle the candidate to claim admission to the University.

Under V. (3) the Entrance Board have to determine what Leaving or other Certificate may be accepted as equivalent to the Leaving Certificates of the Department as qualifying for admission

to the Universities of candidates outside Scotland. This is, with a difference, the present practice. Certain certificates, *e.g.*, of the Oxford University Local Examinations, are accepted as exempting in whole or part from the Entrance Examinations. At present, the Leaving Certificate of the Department is accepted, in the same way, as exempting, in whole or in part, from the Entrance Examinations. But if I understand the Ordinance aright, the standard of equivalence is not, in the future, to be the Entrance Examination of the University, but that of the Leaving Certificate of the Department. Again, there is no doubt of what the ideal of the framers of the Ordinance was. They looked forward to the time when the satisfactory completion of a Secondary School course should be the normal mode of entrance for the majority of candidates claiming admission to the Universities. This is clearly brought out by Section (4), where the duties of the Entrance Board are limited to the direct examination only of candidates, either from Scotland, or from outside Scotland, who, owing to *exceptional* circumstances, have not been able to attend and to complete satisfactorily an approved course of Higher Education at a recognized school. At the present many Colonial students can produce no such evidence, since no certificates similar in character to that of the Scottish Education Department are in existence. But again, the authors of the Ordinance clearly looked forward to the time when both in Great Britain and in the Colonies there should be a system of interchangeable certificates qualifying for admission to every British or Colonial University. Section VIII., which makes provision for the admission of candidates over twenty-one years of age without examination, requires no comment.

Section XIV. is of considerable importance. It provides that the Senate of each University may, from time to time, determine, with respect to any particular class, the conditions under which attendance thereon shall qualify for graduation. Such a principle is operative at the present time. Thus, *e.g.*, a candidate who has not included Higher Latin in his Leaving Certificate must pass on the higher standard before he is allowed to enter the graduating class. But the provision has a wider consequence under the new Ordinance. The present examination of the Entrance Board requires a pass, at least, in Lower Latin or Lower Greek. Hence the candidate who has already passed in Lower Latin has simply to convert the Lower into a Higher. Under the new Ordinance it may be possible for a candidate to enter the University without the inclusion of Latin in his Leaving Certificate. The provision declares that before the candidate can enter the graduating class

or any course which includes Latin as essential, he may have to produce evidence of ability to profit by attendance on the class. The method of determining fitness is left entirely to the University authorities. They may do so by means of an examination, or in any other way they deem suitable.

Thus, the whole spirit of the new Ordinance is to open as widely as possible the door to all suitable candidates, and at the same time to leave the Universities free to determine what is the preliminary qualification necessary for entrance upon any particular class, or upon any particular course of study.

This leads me to state briefly the general nature of the relation of the School to the University, and to set out certain general principles which, in my opinion, ought to guide the Universities in their entrance requirements upon the Schools. This is a difficult problem; partly because the Universities vary in the courses of study offered; and partly because in most cases, and especially in Scotland, the Universities have no real control over the Schools from which they draw pupils. In the first place, it seems to me, the object of the School is to provide a complete course of Secondary Education, and to frame its schemes of study so as to secure a sound and well-balanced curriculum which may serve not merely and wholly as meeting the entrance qualifications to the University, but may also be, at least for some pupils, an end in itself, in the sense that it is the completion of the formal side of their education. In the second place, and negatively, the inclusion of, say, a high standard in Latin or in Mathematics as an essential qualification for all entrants to the University tends to give an undue bias to the work of the School, and to neglect the interests of the many for those of the few. After all, the Universities, and especially the modern Universities, do not exist solely for the turning out of a few classical scholars, or a few expert mathematicians, but for the education of the many, who have neither the aptitude nor the ability to profit by the intensive study of these subjects. The general studies of most importance at the University stage in Arts for the majority are the Sciences which deal with the problems of adult life—*e.g.*, Economics, History, Political Philosophy—and for these no extensive knowledge of Classics or Mathematics is necessary. At the same time, it is not to be understood that the few pupils with special ability for the above-mentioned or other subjects are to be neglected. All that is contended for is that the entrance requirements of the Universities should not be drawn up so as to suit the few, but should be as wide and as catholic as possible. In this respect the new Ordinance of the Scottish Universities regulating

the entrance of students is to be commended. It declares that a sound and well-balanced course of Secondary Education should be the normal mode of entrance to the Universities. It deprecates the continuance of a general preliminary examination which, in many cases, leads to the cramming of the pupil, and not to the intelligent understanding of the subjects examined upon. It provides that where there is native ability for Classics, or Mathematics, or Modern Languages, the pupil may take a specially approved course which includes the intensive study of one or other of these subjects. The difficulty, however, of so specializing is great. Most of the Secondary Schools in Scotland are small, and have not a staff adequate for the purpose of specialization. As a consequence, specialization is, as a rule, confined to the Schools of the larger cities and towns, the others contenting themselves with the normal course already mentioned. The Ordinance, further, provides in the case of a student who has been unable to pursue in school the study of a subject requisite for attendance upon some special class or course, that within the University he may still have an opportunity of satisfying the entrance requirements (*cf.* Art. XIV.). As a consequence any pupil from the smaller schools has an opportunity of making good later any defect in the requirements for attendance upon a particular class.

In the third place, much depends upon the character of the Entrance Examinations of the Universities. If the examination stresses a knowledge of facts, rather than the training in the methods of attacking and solving problems, then the School work will tend to be of a like character. This is one of the difficulties, *e.g.*, of including Science as one of the subjects in the Entrance Examination. Hence in Scotland Physical Science, except in the form of Dynamics, has no place in the Preliminary Examination of the Entrance Board, although a pass in Higher Science in the Leaving Certificate Examination is accepted in place of Dynamics. But the examination in this subject is not by means of a general paper, but by the consideration of the records of work done by each pupil throughout the year, supplemented by a practical testing of every candidate by the officers of the Department. The method of examining the literary and mathematical subjects of the Leaving Certificate Examination is by setting a general paper in each subject for all Schools. As the number of candidates has grown it has become increasingly difficult to draw up questions which will be equally suitable for all Schools. This is partly remedied (1) by taking into account the opinions of Headmasters on the work of the pupil throughout his course; and partly by the individual examination of each pupil by an Inspector of the

Department. In cases of doubt, the opinions of the Headmaster and of the Inspector are often sufficient to turn the scale in favour of the pupil. Thus, in assessing the work of any candidate, three sets of considerations are taken into account, viz., his written work at the examination; the opinion of his Headmaster; and the report of the Inspector on his personal questioning of the pupil. From having taken part, during the war, in the assessment of such Leaving Certificates, I can speak at first hand of the care and thoroughness with which every candidate's claim to obtain the Leaving Certificate is considered. On the other hand, the chief defect of the examinations of the Entrance Board is, that it is impersonal, knowing nothing either of the pupil or of the opinion of his teacher, who, in many cases, is a professional crammer. From this it follows that such a method as set forth above is much more successful in testing capacity than any external examination which has no knowledge of the personality of the pupil. But, since external examinations cannot altogether be dispensed with, these should be designed, as far as possible, to test ability to tackle and solve problems rather than to test the amount and extent of the knowledge of the pupil.

Lastly, if the work of the School is to be correlated with that of the University, then in determining the entrance qualifications necessary, there must be co-operation between the University Authorities and the Headmasters of the Schools. To have an Entrance Board composed wholly or mainly of Professors and Lecturers of the Universities is not to be commended. For each University teacher tends to over-emphasize the importance of his own particular subject as a qualification for entrance, and so often fails to take a sound and comprehensive view of what is possible for the average pupil during the Secondary School stage. My experience as a member of the new Universities Entrance Board for Scotland has made me realize this fact. Hence, between the two extremes of an Entrance Examination wholly determined by the University Authorities, on the one hand; and the mere acceptance of the records of the teachers on the other, as is done in the system of accredited Schools in vogue in some parts of America, I am strongly in favour of a synthesis of the two which will combine the advantages of both methods.

In Scotland, the problem is still more complicated, since we have two controlling authorities, viz., the Education Department and the Entrance Board, with only an external and consultative relationship between them. The remedy for this is for the Universities to have a real say and control over the Leaving Certificate Examinations. This could be effected by the establishment of a

Higher Education Board for Scotland on which there should sit (*a*) representatives of the Department, (*b*) representatives of the Universities, and (*c*) representatives of the Heads of Secondary Schools. To this Board should be entrusted the educational control of the Leaving Certificate curricula and standards of pass, as well as of the Entrance qualifications to the Universities. The extension of the system to the Provincial Universities of England and Wales is also possible, and thus in time it might come about that the normal method of entering all Universities would be through the possession of a certificate testifying to the satisfactory completion of a course of Secondary Education. The case of Oxford and Cambridge involves a separate and distinctive problem. But I see no reason why a solution on the same lines is not likewise possible.

ALEXANDER DARROCH.

APPENDIX.

Leaving and Intermediate Certificates.

	Leaving Certificates.			Intermediate Certificates.		
Year.	No. of Schools.	Presented.	Passed.	No of Schools.	Presented.	Passed.
1908	163	1,586	904	316	5,649	3,727
1909	159	1,887	979	289	5,880	3,540
1910	163	1,982	1,080	274	5,955	4,093
New procedure in 51 T (*a*) introduced this year.*						
1911	153	2,092	1,248	276	6,178	4,797
New procedure "Compensation" (§ 9 (*b*)), Cir. 340.†						
1912	160	2,202	1,711	267	6,035	4,765
1913	159	2,290	1,739	274	6,327	5,088
1914	171	2,158	1,622	280	6,468	5,137
1915	170	2,068	1,617	284	6,566	5,459
1916	172	2,102	1,570	286	7,361	5,658
1917	176	2,237	1,773	285	7,417	5,647
1918	171	2,141	1,653	288	7,739	6,022
1919	170	2,139	1,737	286	8,177	6,298
1920	170	2,383	1,879	291	8,672	6,717

* Teacher's estimate on pupil's work taken into account for the first time.
† Compensation for style weakness in one subject if excellence in another is shown.

THE UNIVERSITIES AND SECONDARY EDUCATION.

Third Paper.

I ENTER upon this subject with some trepidation because it is a debateable country subject to mists, and opponents from either side who meet in argument therein are at times somewhat like King Arthur's knights in that last battle of the west, where "friend slew friend not knowing whom he slew." The education of this country has grown up and developed, as other forms of our national activity have developed, with vigour and independence throughout its several provinces, and the child in its growth to adolescence passes from one to the other, often with some loss, just because the independence of those who control each stage has been rather too jealously guarded. The Elementary Schools of this country, for instance, form one stage, which does not lead on as naturally as it should to the secondary; the Private Schools form another territory, where independence is more rife, and the inhabitants are at times not unlike feudal barons in their separate castles. The whole great system of State-aided Secondary Schools constitutes a third large province, wherein at least three types, if not more, of Secondary Education are contending for supremacy. Allied with this, but still without it, is the jealously guarded domain of the Public Schools. Beyond them all lie the Universities ancient and modern, which, however they may vary in origin, tradition, and outlook, are alike in this, that they are jealous, and rightly jealous, of their autonomy.

Great advantages have followed from this independence, but some loss as well, and in the development of our education there have been notably absent what Lord Haldane would call the operations of a general staff. I do not think that I at all want to see a general staff, with all education for its province, and with a G.H.Q., I suppose, situated in Whitehall: there would be too much loss of spontaneity. But I want, in examining one important part of the field, to see whether there are not methods by which we, whose business is Secondary Education, and those who are concerned with the Universities can work together more closely and with a better understanding than is the case at present.

For we do not know each other, and we rarely meet. One hears that it is the opinion in some quarters in the Universities that the Schools think that they are entitled to give orders to the Universities, both as to what they are to teach and how they shall

teach it. I remember a witty poem in the *Oxford Magazine*, not so long ago, in which after not many years from now the Headmistress of Rugmarlchester was reported as dictating terms to the University of Oxford, and demanding the abolition of all intellectual tests for admission. Cross the gulf and enter the Schools: you will hear voices in many Common Rooms remarking that the Universities make requirements in entrance examinations, scholarships and intermediate examinations of various types which are quite inconsistent with and dislocate the work in Schools, and are laid down with utter disregard of what is there done. Both these views seem to me to be exaggerated, but they have their origin, and to some extent, their justification in the fact that both sides are too much ignorant of the other.

During the past ten years, the system of education in Secondary Schools has been reorganized, and that reorganization is now complete: its broad outlines are not likely to be changed for a generation. It is probably unnecessary in this audience to explain the nature of this reorganization at any length, and in any detail. It will be enough to say briefly that the first stage of Secondary Education will in future be one which will be completed by the good average boy or girl at the age of somewhere about sixteen, and that up to that point the education will be on much the same lines for all. It is marked by the attainment of a School Certificate awarded on an examination whose syllabus is closely allied and responsive to that which is followed in the Schools. It is, however, the case, that there are many who do not, as a matter of fact, reach this standard until they are eighteen, and it has been rightly decided that this examination, if passed in the necessary subjects, and at the right standards, shall count in lieu of matriculation, or the Responsions and Previous Examinations of Oxford and Cambridge. Such boys and girls constitute the "Pass" students of the Universities, and probably no one desires to see them eliminated. They pass on easily from the School to the University, and the co-ordination of the two departments of their education has now been well worked out. For in the School Certificate Examination they pass a test which is closely modelled on the work they have done in their normal course through the School, and on the Boards of all the seven examining authorities which in England conduct this examination, teachers have either direct representation or by means of regular Conferences can make themselves heard.

This is important, for it seems to me to be true, and almost obvious, that the Schools should be left free to do their own work, and to determine what the character of the general education

which they seek to give to all, should be. They ought to be allowed to settle not only what they want to teach, but the way in which they wish to teach it. There is as a matter of fact pretty general agreement as to the content of this general curriculum, and it is my personal hope that in due time the Universities will be prepared to accept a student who has been through a full general course at a recognized and efficient School without further test, or further requirement, than a certificate from the authority of the School that the student is fit to continue his studies. But that time is not yet, though I believe it to be coming. Of course, if a University likes to lay it down that a student should not be admitted unless he has reached a satisfactory standard in an ancient language, or in science, or whatever it may be, that is entirely a matter for the University authority, which is the sole judge of its own requirements and desires. By making such a requirement, it selects a limited *clientèle* from the numbers that crowd the Secondary Schools, and selects them deliberately. Its selection may be wise or foolish, but no one can question its right to make it.

So far co-ordination between the Schools and the Universities in this country seems to have been well thought out, and the system is, I think, more free and elastic and responsive to changing needs than that of other countries. But less praise can be given when we pass to the case of the high average, or distinctly able, boys and girls who take the certificate at sixteen or even sooner, and have two or three years at School in front of them before they pass on to the University. They will, in due time, fill the Honour Schools, and many of them will reach at School a high standard of work. It is in the decision of the question of what that work shall be that there is need of much more conference and of a readiness on both sides to listen without impatience to what the others have to say.

At present, those who are responsible for the Schools feel that they have an insufficient voice in determining the work done by their highest forms. They do not think, and do not claim, that they should have the sole or the deciding voice, but they wish to be heard and considered. At present they have two masters—the Advanced Course System imposed by the Board of Education, and the Scholarship Examinations conducted by the Colleges of Oxford and Cambridge. The Advanced Courses are fairly rigid, though in themselves reasonable as far as they go: they are heavily endowed by the State, and since most Schools cannot hope to support more than one Advanced Course, and transfer of pupils from one School to another has so far not been found to be a

feasible policy, the existence of this Advanced Course means in effect that a bias is imparted to the School-teaching in order to keep up a sufficient supply of advanced pupils of a certain type. In other words, the pupil is moulded to the curriculum, and not the curriculum to the pupil. The work done in these Advanced Courses is tested by a Higher Certificate Examination, conducted by the same authorities that conduct the examinations for the School Certificate, and on the examinations State Scholarships are awarded as well as some offered by the modern Universities.

It may be said that teachers are represented on these authorities, and that they are as well off as they are when dealing with the School Certificate. But it is not so, for the Higher Certificate Examinations must conform to the requirements of the Advanced Courses, and what those are to be is decided by the Board of Education. On the other hand, the College Scholarships of Oxford and Cambridge remain quite unaffected in their requirements by any part of this great State-endowed system of advanced work which has grown up, and quite independent of the views of the teachers in the Schools. The Colleges are often regardless of the demands each of the other, and particularly in the awards of History Scholarships they have made such multiple demands that a History Sixth has been of necessity split up into a collection of students working each on a different syllabus for a different examination. I do not wish to elaborate the case in detail, but I hope I have said enough to justify the first demand I wish to make, that there should be conference between the authorities of the Universities and Colleges who award scholarships, the authorities who examine for Higher Certificates, the authorities of the Board of Education who impose Advanced Courses and award State Scholarships, and the schoolmasters and schoolmistresses, who actually teach the Fifth and the Sixth Forms which prepare to meet all those requirements, in order that unnecessarily conflicting demands may not be made, and that it shall be possible for a pupil to pass through those forms as a member of the form working without undue specialization and without undue isolation. The adjustments that need to be made are not really great, but they may grow much more considerable as time goes on. To take part in a Conference is not to barter away freedom, and concerted action will help Higher Education in this country far more at this moment than the rivalry of units, or a tug-of-war between the State and the Universities in which the Schools will play the inglorious part of the rope.

The second request that I would put before the authorities of Universities is that when a student has gained the Higher Certi-

ficate at School as the result of two years' specialized and advanced study, they should give some definite credit for it. I hope that it is common ground that it is a good thing for a boy or girl to put in this time at School and to read this higher work. But human nature being human nature, it is natural that the students should expect some tangible reward, and I am thinking of the rank and file of these, and not the scholarship winners. I suggest that it would be enough if the Universities would allow students who possessed the Higher Certificate to start at once on reading their Final Honours School or Tripos without any preliminary tests, remitting Intermediate Examinations, or such tests as the first M.B. in the Medical Course. Of course it would be for the Universities to specify the standard of attainment in the Higher Certificate that they would require, but it would be a great incentive that they could thus offer to the Schools. Nor would they lose. For I believe I am right in saying that the criticism most often made by the better students is that they are compelled to spend often the whole of their first year at the University in repeating what they have already learnt, and going over ground with which they are familiar.

Their keenness is checked and their enthusiasm is dulled. What the eager student wants, is the "glory of going on" and the feeling that he is going on. To grant this is not to limit University autonomy, but to recognize the fact frankly that the Universities must join on to the Secondary Education at two points, at the stage of the first or School Certificate Examination, and at the stage of the second or Higher Certificate Examination, and that the difference between these two stages should be frankly recognized and clearly provided for. The Universities should themselves lay down at their own discretion the conditions on which they would grant privileges to the higher class of student. But some privileges they should grant. It would, I am sure, be a bad thing if the Universities as a result of taking no action to meet this need drew their better students into their ranks at a younger age. I am speaking mainly of boys with whom my experience has naturally lain, when I say that in the last two years they reap a hundred fold the fruit of the English School course. It is then that responsibility quickens a boy's development all round, that he learns to control others and himself, that moral, intellectual, and æsthetic interests waken. The good English sixth form is the happiest feature of our education. Equally I am sure that it is a mistake on the part of schoolmasters to try to do with their sixth forms work which is really of the University type, and which the boys should come on to fresh when they have reached the

University. To attempt to teach a sixth form the meaning of Greek Philosophy, Advanced Economics, Historical Research based on original authorities, the minutiæ of Philology and Textual Criticism, Psychology, the higher uses of the Calculus, though they are all attempted by ambitious schoolmasters, seems to me to be a *tour de force*, and to have the undesired result of spoiling the effect of these higher studies at the time when they should properly come to a student with all the freshness of a new appeal. That the cobbler should stick to his last is as sound counsel for the Schools, as ever it was for the artisan of old time.

The chief need, it seems to me, is still the need for more freedom of intercommunication between the teachers in Schools and the teachers in the Universities. We need on both sides to know more what the others are aiming at; particularly do the schoolmasters need to know what the University teachers most want. The better co-ordination of studies by means of changes in the Scholarship and Higher Certificate system are matters for the authorities of the State and the Universities after they have heard what the Schools have to say. But I think that we need something beyond this, something more permanent, and more human than reformed schedules and syllabuses. It would be a good thing if once a year, or once every two years, those interested in the teaching of a subject at both Schools and Universities would meet one another and discuss their problems, old and new alike, if the teachers of Classics would meet, the teachers of History, of Mathematics, of Science, of Modern Languages. Such gatherings in my conception would be mainly informal, and largely social; they would break down partitions and create friendships. New ideas would spread more quickly, and the schoolmaster would become less old-fashioned and less lonely.

We are all fellow workers in one task, and we have in the past been too separate from one another. We shall all work the better if our co-operation is conscious and well-informed, and we are free to put our best into the work which we know is expected of us.

CYRIL NORWOOD.

Discussion.

L. A. ADAMSON, M.A. (Melbourne): I belong to a body which for about three years was hammering out a system which we thought was based absolutely upon the Scottish Leaving Certificate system, and in Sydney I should say that the Intermediate Leaving Certificates are on the same lines even to the extent of the examination being conducted by a Government department, viz., the Department of Education. I prefer certainly the Victorian system, and I should like to explain why, for I think it is possible that the audience may be interested to know what is being done at the other end of the world in that way. The whole of the preparatory examinations of the University—that is, the Matriculation and the examinations which do the duty of school-leaving examinations as well as of entrance to the University—are controlled and conducted by what is called the Public Examinations Board of the University. That is a body that consists of an equal number of representatives of the Education Department, of the registered schools—for we have a Registration Act in Victoria which has been in existence for the last fifteen years—and of the University, the three different interests being equally balanced. The representatives of the registered schools are elected, or rather they are formally appointed, by the University Council after election by the Incorporated Association of Secondary Teachers: so teachers have their voice thoroughly well heard on that Board, and it is not too much to say that counting the Education Departments representatives also, the actual teaching interest prevails. Now the result of the Board's labours has been that there are two ways of obtaining Matriculation at the Melbourne University. An actual examination is conducted; it is almost on the same lines as the Scottish Leaving Certificate, but higher in standard. But there is another way. A school may elect to enter what is called Class A, in which case it is inspected by the inspectors appointed by the University, or, to be more accurate perhaps, borrowed from the Education Department by the University. If a school chooses to enter Class A, then it conducts its own internal examination, and provided the pupils pass a course of six years of secondary education—from twelve to eighteen or less in certain cases—and satisfy the authorities of the school, they thereby are able to enter the University on the certificate of the Headmaster. On the other hand, there were certain schools which, unless the inspectors were not only appointed but also paid by the University, were rather nervous lest they might come under the control of the State Department eventually; and if a school

chooses to stand out from Class A, it may take the examinations which are conducted by the Public Examinations Board. Now in that way we certainly have the freedom which Mr. Norwood desires. A school is quite able to choose whichever way it likes; in any case the whole system is controlled by a Board on which the teachers have a predominant voice; and I may say that on that Board, though we have sometimes had high arguments, we have always found a peaceful solution.

Mr. Norwood put his finger upon what is really a grave difficulty. That is the case of the Leaving Certificate Honour candidates, the boys and girls who, after getting the ordinary Leaving Certificate, do one or two years of higher work, and who present themselves for Honour examinations upon which depend the Government and other scholarships. That has been a question that has been before the University authorities and before the Public Examinations Board for some time now, and it is hoped that an arrangement may be come to such as Mr. Norwood desires, by which credit will be given by the University for their higher work. At present a certain amount of credit is given only in the case of Natural Philosophy and Chemistry, but it is desired that some credit should be given to such candidates entering the University for any course. Mr. Norwood is perfectly right. Our experience is that they have far too often to go over work which they have left far behind them, and from my thirty-six years' experience in Victoria I can say this, that I do not think there can be a boy anywhere who puts his mind into a corner and sends it to sleep more than the Victorian boy, if he thinks he is not being kept up to the collar. That is now perhaps the greatest difficulty that I think the Melbourne University system has to encounter, and when I left Victoria a couple of months or so ago, we were consulting together with great hopes that we should be able to find the solution of it.

WEDNESDAY, JULY 6.—Morning Session.

CHAIRMAN.

THE RIGHT HON. THE VISCOUNT HALDANE OF CLOAN, O.M., K.T., D.C.L., LL.D., F.R.S., CHANCELLOR OF THE UNIVERSITY OF BRISTOL.

"The Universities and Adult Education."

I.

LECTURES FOR THE GENERAL PUBLIC WITHIN THE WALLS OF THE UNIVERSITY.

II.

EXTRA-MURAL WORK.

THIRD SESSION.

THE CHAIRMAN: Vice-Chancellor, ladies and gentlemen, the subject of our session this morning is one of great importance. It has reference to the transforming power of democracy, everywhere evident. There are those who are fond of speaking of that transformation as having come about through the war. I think its beginnings were much earlier. Those of us who had to be in contact with affairs during the years before the war saw this new force operating, and now it is operating, stimulated though not created by the movement which convulsed humanity. Ladies and gentlemen, the tide of democracy is flowing in, it is lapping round the bases of our institutions, and to-day it is lapping round the foundations of our Universities. That is something which contains a very great lesson for us and a lesson which we ought to be able to turn to great profit. There are two ways in which we are affected by the advent of democracy into University life. In the first place, presently we shall not be able to secure the financial support from the public which we require unless we can give the public what it is now asking for. That may seem odd as an observation that is otherwise than trite to you who are here from the Universities of the Western Provinces of Canada, or from the Universities of some of the States of America or Australasia; but with us it is anything but trite. We are only slowly accustoming ourselves to the receipt of grants from the State, supervised by the watchful eye of the Treasury Committee, and although we who represent the young Universities lap down the milk that is poured into our mouths and open our mouths for more, that is by no means in the same way the case with the old Universities. The spirit of apprehension and a certain conservatism makes the gap between the State and the University a larger one, and you who come from distant regions can easily appreciate it. Well, the democracy is taking an interest in its public funds, it is beginning to realize that at any rate in the case of the younger Universities, and presently it will be so with all the Universities, they are dependent to a very large extent on taxes and rates; and the democracy is going to ask, and is beginning to ask, why it is that, while they pay the rates and taxes, only a limited section of society gets the benefit. Consequently it becomes us, if we want more, and we want a great deal more for our work, to see that we are able to meet this new standard which is put to us. But, ladies and gentlemen, so far I have only touched on something material. There is another side that is in the truest sense spiritual. All over the world those who work with their hands are calling for the higher knowledge. Without that knowledge

they feel that they cannot be free, that they are held back by fetters of ignorance from liberty to solve their own social problems. Those who understand those problems most profoundly know that they would disappear were they in the hands of educated men, men educated to something like a common level, in whose hands things would be looked at generally and from much the same point of view, instead of with the divergence that is characteristic of our time. There is a class division in knowledge which goes deeper down than any other class division I know, and it is that sense of class division that is producing much of the unrest in the industrial world that we see to-day. It is knowledge that will solve your problems far better than the thrusting of ramrods into delicate works, and I think that that is the feeling which is beginning to take hold of the democracy itself just as strongly as it has taken hold of the intellectuals. Well, ladies and gentlemen, if that be so, we have to recognize this craving for spiritual freedom. That is the meaning of adult education. Fifty years ago in this country the people asked for free and full education for their children. They got that elementary education for their children, and now, fifty years later, there is a new demand. The people wish to have their own minds opened and trained so that they may be fit for entering into the greatest of all societies, the society in which there is communion with those immortal minds whom the past has bequeathed to us who speak in books with an intimacy that would have been impossible in merely personal discussion, and who have revealed themselves in works which ought to be open to everybody who wishes to be able to assimilate the best. But these things are closed to most people, and it gives a sense of pain and a sense of irritation when it is seen that this need not be so. Thus we who are here to-day are called to a new work, the work of opening up that which is the best and the noblest that the earth has to give to still more of our fellow countrymen. Now, ladies and gentlemen, this is a movement which has taken hold, not only in this country, but all over the world. I see Mr. Mansbridge sitting in front of me. He has just come, I think, from Czecho-Slovakia where he was welcomed as a brother—and I have no doubt a very stirring brother. He has been in various parts of the world and there are others amongst you who have done the same thing. What I hear is that there is no part of the world where this new movement is not making itself manifest in some shape or form, this movement for equality of knowledge. Well, if that be so, then our task is a very obvious one. We know what that knowledge must mean. It can only be knowledge of the higher kind,

and if it is to be knowledge of the higher kind it must be knowledge of the highest kind. It is a great mistake to suppose that because a boy or girl has not been at a secondary school, therefore that boy or girl is wholly incapable of assimilating the higher knowledge. There is a school of experience, of life, which is valuable, and there are methods of teaching by which some if not everything of the higher knowledge can be imparted; but what is essential is that just as in the Universities we keep the nose of the student to the grindstone, so with working men or women from the mine or the factory who come for their two hours in the evening, their noses should be kept to the grindstone in such regular courses as will enable them to expand their minds and assimilate that higher quality of which I am speaking.

One hears to-day a good deal of a demand for Labour education. I know nothing of Labour education any more than I know of Capital education. Both are delusions, belonging to lower levels, and it is not with the lower levels that we are concerned. We are concerned to give to all either the truth or the best struggle after it that it is possible for the human mind to make. The spirit of that we impart by the contact of the personality of the great teacher with the student. We know no other way than that of bringing the student into the higher atmosphere we try to provide or of making possible the sense that there is something above all mere authority, something above the reputation even of the best-known man in the newspapers, and that it is to those higher standards of truth and to the light cast upon them by the teaching of the greatest minds that we can alone direct the soul of the inquirer after truth. Well, our method—the method which I think is being adopted all over the world—is a plain one. It is this. We have to train up the very finest teachers we can, who will be the equals of the Fellows and Tutors at the best levels of University life, and to send them forth outside the walls of the University to establish centres of University life in those industrial places where the population has congregated and where the University atmosphere needs to be provided. The work has to be done outside the walls of the University. We cannot bring the democracy into the Universities because the Universities would be swamped, but what we can do is to enable the Universities to send forth more trained teachers into the highways and byways and into the central places, there to work and live and teach what they have to teach. It means a new class of teacher, it means a great addition to the burden of the University. It means that the State, for whose good it is, must come in and help freely and liberally. It means that when we have done this we shall have

permeated by degrees the spirit of the population with an outlook which will lead to study, study that will last not only for a year or two, but, inspiring the mind on which it has taken hold, will teach men and women to educate themselves until they reach the grave. Well, that seems to me to be the work that we have all got before us, to develop the training for the higher teaching within the Universities, which will enable the new teachers to do their work in these outside industrial centres. But that is not all. Single-handed, the teachers of the Universities cannot reach the whole democracy. There are places which are not populous enough for them to go to—the country villages. I will just tell you one thing which may be new to some of you. We are beginning to find in Scotland a way round this difficulty, a way of application of some part at any rate of the University trained teacher's ability. In Scotland we are curious people: we are very fond of our Protestant theology, fond of disputing about it, and yet, notwithstanding this, just recently and quite unnoticed by the South, we have taken the Roman Church to our bosom. The State has taken over all the elementary schools, and as many of the secondary as it can get, whether they are Roman or Episcopalian or Baptist, they are all now very closely inspected and no teacher is allowed to teach in them who is not up to the standard that has been set. But that is not all. Along with this cordiality towards the churches we came to the conclusion that the Training Colleges of the churches were no longer reliable places in which to train up teachers, so we have sent our teachers to the Universities, and nobody in Scotland can get a high place as a teacher in an elementary school unless he possesses a University degree. Now, what is the result? A great many of our new teachers in Scotland in the country villages are imbued with the spirit of the higher learning which they have imbibed, and they are beginning already to show signs of making themselves centres of, as it were, delegated instruction to people about them in these small villages; imparting knowledge which they gained by the inspiration which came from the past and through the teaching they got at the University. We have also in Scotland library organizations in the counties, and we have a great Trust, called the Carnegie United Kingdom Trust, which has done a very curious thing. Not only has it provided books, but it has provided a new kind of motor-van with glass sides in which the books are arranged on shelves, so that you can see them from without. The village schoolmaster is the librarian who finds out who want the books, and when the van comes round once a week gives out the books that are wanted. But don't imagine that these are shilling novels. On the

contrary, what you can get there may be a very lucidly-written treatise on the differential calculus, something of a kind which appeals to the imagination, to the soul which is thirsting after knowledge! Well, I have only referred to this just to show you how the new spirit is stirring and the new forms it is taking. It is for us to see that we make the Universities, which after all are the sources of power, strong enough and comprehensive enough in their aim to meet this new demand, for it is a demand that goes to the very roots of the welfare of the State. According as we mishandle it, we shall suffer, and according as we handle it well, we shall grow and prosper as we have never prospered before.

I am speaking in Oxford. There is no University in the world that has more sacred memories as the inheriter of a great tradition, a great standard, the evolver of an atmosphere which is by itself and which no amount of new work done from outside could replace. I remember long ago, when we were engaged in the work of building up the new Universities, going to stay with Mr. Joseph Chamberlain at Birmingham. We had been very active. We had added in a few years eight new Universities in this country, and two more in Ireland, and he had just succeeded in bringing his own University of Birmingham, of which he was very proud, into a state of activity. But one morning, walking in his garden, he said to me: "We are working in a common task, let us make a covenant. Let us do nothing that can touch the atmosphere and the traditions of the two old Universities. They are irreplaceable, they are the growth of centuries, they are a help and an inspiration to all of us who are younger; let us, therefore, treat them as sacred." I, too, say that in your presence, Vice-Chancellor, for I feel that the atmosphere of this University and the atmosphere of Cambridge, the result of tradition, the bequest of the tradition of the greatest of men, are priceless, something which we look on not only with veneration, but as a source of inspiration for us who are younger. You can help us as perhaps no place can help us to the sense of equality in the standards we have to keep up, in the kind of teaching we have to provide for the democracy and, this is the last thing I wish to say, we must keep up the level of that democratic teaching of the adult worker to the very highest, if it is to last him throughout his life and to his death. We must preserve it by the most potent of all means, and the most potent and sure of the means that I know is by being perfectly frank about the defects of alternatives which are offered, and by relying upon that wonderful sense of values which the democracy itself possesses for the rejection of what is lower and the insistence on what is best.

THE UNIVERSITIES AND ADULT EDUCATION.

First Paper.

The Open Door of the University.

We are all agreed in these new days that the Universities must be "generously useful" to the community. An American writer has said, "A college which satisfies itself with self-centred culture is a fountain in a park which thirsty children watch through an iron fence; a College which hears the cry of the time sends the stream of its best gifts along the channel of a more excellent way, for the refreshing of a thirsty world." We have become aware of a thirsty world of men and women outside our academic railings newly conscious of their powers and eager to enter in some measure, at all events, into an inheritance which they feel should be theirs. Amongst many of them there is a pathetic belief in the Universities. They cannot come to us. They are often too shy, or too tired, at the day's end to come so far. We are agreed that, as we have learned to say, "the Universities must be brought to the doors of the people."

All the Universities are awake to the new possibilities. The lecturer is abroad, chosen—trained, indeed, sometimes—for this special duty. He finds men and women in groups waiting for him in the outskirts of the city, and in the villages beyond, in their own halls and modest "Rooms"—poor places often enough, but at all events *their own*. Some of these have the old hunger for knowledge, some even for wisdom, others with "mind and desire not always as strong and eager as we would like," but ready to be drawn in with the others, if the teacher has the true missionary's skill and patience and the something more which it is not very easy to name. These men, as I have said, are too tired to come long distances to the University in the evening—or too shy. It takes more effort than we realize for ordinary working men to find their way to awful and unfamiliar places, strangers amongst strange faces which have no welcome in them. The professor and the other students, themselves shy it may be, or thinking most probably only of their own affairs, have never considered this need of a "welcome" to these newcomers with their dim ideals of a happy brotherhood of learning. "They love fellowship." (I quote here, as throughout this paper, from letters which have come to me from working men, to whom

the opening of the Universities is a thing "very near to their hearts.")

"They love fellowship." This is what so many humble students miss in the University. They get it in their own meetings for business, or religion, or "mutual improvement," or whatever it may be that draws them together. They get it at the University Settlement, which should be a nursery and a stepping stone, as it may be a pattern, to the University itself; but it hardly seems to some of them that they "step into life" when they enter the academic doors. I am not making light of the ordinary evening classes which are held at the Universities. I know too much of their value to isolated "unacademic" students; but the contact of student with student there is felt to be an "'intellectual,' rather than a 'spiritual' contact," and it is the latter, they say, that really matters. It is what they mean by this "spiritual contact" that I want to see in the Universities themselves. The main currents of the new movement must, I know, be running from the Universities outward. There must be decentralization, "extension," as we used to call it in the old days; but the question I want to ask is this: Can there not be from the first a counter-current from the homes of the people to the Universities?

I am not thinking now of the undergraduates who began their educational life in elementary schools, nor of the possible "evening students," painfully working, after a hard day's work, for a degree, which may imply that they have in the end passed all the requisite examinations, but can never mean in any true sense that they have been turned out as the finished product of the University. Nor am I thinking now of the students of mature age who, with the scholarships and bursaries of the future, may matriculate, and so be brought—from a tutorial class, or University Extension Centre—into the ordinary student life of the University. I am thinking of men and women still in the working world, but "searchers after knowledge," strugglers "towards a wider outlook and a broader interpretation of life," hungry for some true fellowship with the master minds, students at heart who might find perhaps in the intellectual life a joy we never dream of and enrich and gladden all men with their work. I am thinking especially of groups of men and women interested in a particular subject, in some branch of science, or history, or economics, or, it may be, in poetry. I have in mind such a "fellowship" of young poets in our own city—but men who, whatever their subject, can come together "to give as well as to receive encouragement, suggestion, and instruction," for

whom, with the chance of using our libraries and laboratories, paths, old and new, will continually open.

Of course much has already been done to draw those I am thinking of within the doors of the Universities. Rooms have been generously placed at the disposal of the Workers' Educational Association and kindred institutions ; lectures have been delivered to audiences of working men ; they have been called to conferences on subjects in which they are vitally interested. No University has been more generous here, I think, than the University of Birmingham. The late Secretary of the Midland District tells me it has done "everything in its power to make the members of the W.E.A. feel that the University is their home. An extra porter," he adds, "was engaged (thirteen years ago) so as to allow the building to be open in the evening for W.E.A. classes and lectures; later . . . we were given an office in the University and a substantial grant towards the furnishing of it . . . we had at our disposal each week evening in term two classrooms . . . the use of a large room and piano for a music class, and a lecture theatre for our popular Wednesday evening lectures. No charge whatever was made for rent, heating, or lighting. . . . In vacation we had no difficulty whatever in getting the University opened when we wanted to hold meetings or conferences." No wonder the students felt themselves attached to the University. No wonder that the first "great shyness" gradually wore off, though, it is true, this feeling still existed for a long time among many sections of "the workers." Many interesting experiments have been made in Manchester. "Some years ago authority was given by the Council for the admission of students, who had attended a tutorial class for not less than three years with credit, to University classes without fee, and a small grant was set aside for bursaries to assist in paying railway expenses. Invitations have been given periodically to selected groups and to tutorial class students as a whole, and departmental demonstrations and lectures have been provided, followed by a short meeting with a general address." I suppose most of the provincial Universities and University Colleges have tried in some way or other to come into touch with the people. It is well known that the gracious hospitalities of Oxford and Cambridge have done much to spread a new feeling of trust and affection for the Universities amongst working men.

But in the future, quite certainly, there will be a new scope for University effort, and a larger and richer harvest. The University of the future will be increasingly, no doubt, the home of research. It will always be the place through which "students," generation

after generation, will pass, and leave in the end, with their degrees and—a far finer thing than any mere label—the authentic marks of the University on their minds and characters. But in the new days the Universities will find a yet wider influence as they draw to themselves men and women, few of whom can hope to become students, in any narrow or technical sense, but all of whom will bear something of the University stamp. The University will be "theirs," not because they have their share in supporting it out of the rates, but because they have found a true home within its walls. It will be the centre of the intellectual life of the city and district, the natural headquarters of all the "learned" societies, and of societies less learned but still societies in which men are gathered together in the serious search for beauty and truth. It will be a focus of light, a home of causes not lost, a link between students everywhere, who are drawn into it as pilgrims are drawn to a shrine. In the University they will find their place, and come as Coleridge's stars came, you remember, into the blue sky which belonged to them—"their native country and their own natural homes, which they enter unannounced, as lords that are certainly expected, and yet there is a silent joy at their arrival." That is my fantastic dream. I want to see every humble student, who can profit by the instruction given, and by contact with trained minds, welcome *within the walls of the University itself.* No one will be more loyal when the day arrives and he, who has been a stranger, or at most a guest, finds himself at last "a child at home." I may perhaps be permitted to mention here that when we gave the Honorary M.A. of the University of Bristol to Mr. John Gregory, a cobbler by trade, the degree given to the old poet was recognised by *The Times* as the most generally interesting of all those on our list. It was significant of the new day in which the University will draw into itself *from every quarter* men and women whose work, though in no sense academic, in the older and drier sense of the word, is yet recognized to be of a very high order, and of lasting value to the community.

The new "spiritual" University will not be built in a day. There is a great deal of diffidence—suspicion, perhaps—to be overcome. There must be many lectures and conferences, and social gatherings, through which friendships will be slowly made, and summer schools, I hope in the vacation which will draw these new students to live for weeks at a time in our hostels while they are working by day in our University buildings. We shall have to learn the varied graces which belong to the hospitable mind and heart. Most of us have no idea of what the

considered hospitality of a University may really mean to those who experience it for the first time. It is a revelation. "I entered into life," one wrote to me, "when I stepped into the rooms of those ancient places." He was thinking of Oxford and Cambridge, but even in our newer Universities they find an "atmosphere" they say. which is new and wonderful.

No doubt they believe in us too much, yet for them the glamour of the University is there, and perhaps, if we will, that first illusion will never wholly fade away. I can never forget what one of the most trusted of our Labour leaders, a fellow guest in this University, told me once about his first visit to Oxford, when he found himself in College rooms for the first time. I am constantly touched and humbled by the shy desire of working men to meet with us of the Universities. I had a message the other day from some members of the Council of the Adult School Union in Bristol who wondered if there might not be gatherings sometimes "at which lecturers and unacademic people might talk together" at the University. At the same time a letter came from another source suggesting "well-arranged debates at the Univerity in which men, known to the workers,—and women —could take part. I do not think," the writer added, "that we are likely to get the academic spirit in very many people for some years to come. Our people"—he wrote from a political organization of labour—"often imagine that it is only necessary to get angry to qualify for some progressive movement."

But they get to know that there is such a thing as the "academic spirit." Some men from a distant suburb of Bristol, who met together to study economics once a week in a hairdresser's shop after business hours, once wrote to me to ask if I would find them a leader for their class at the University. "I do not think," they said, "he need necessarily be of the same way of thinking as ourselves." They realized that there were disadvantages in a discussion society in which everybody thought alike, and when men discover that the University teacher is a human person like themselves, they want to talk with him; they want to share his life; to become the heirs of past ages, as he is, in some sense, an heir. Education, next to religion, is the great leveller. Even in India, an Indian friend tells me, in spite of caste, the educated man to-day is welcome at every table. It is the sharing of thoughts and high ideals in common that makes us one.

The suggestions I have somewhat indirectly made in this paper are many of them, I think, practical even now; but it is not wholly waste of time to look into the future and dream a little, even if the dreams at first seem impossible or fantastic. I am

looking for Universities in the future with buildings large enough to give us the new accommodation that we shall need—rooms simple it may be, but with a dignity and fitness—and perhaps a beauty—of their own, where we can meet and talk together. How mean the borrowable classrooms and "public halls" of the past have been! I still see in a disturbed vision the infant classroom in the city where long-legged students sat in children's seats to discuss historical problems with me in an elementary school. All of us have had experience of the sordidness, the ugliness, the dirt and dreariness of the places in which we have been asked to lecture, and the depression which came upon us there. None of us are unconscious of our surroundings. We want rooms which may seem to us "natural homes" of learning. And I am looking for good men on the staff—many more than we have yet dreamed of—professors, lecturers, demonstrators, librarians, men *accessible*, with leisure—leisure which sometimes seems to be wholly banished from Universities in modern times—that they may really be free to take their share in the service of all these new students who may need advice from time to time, and encouragement and help in their studies. We shall need too a generous provision for the opening of libraries and laboratories for longer hours. One of my ardent friends wants students—he is thinking of working men like himself—to be free to attend the University by "day or night" for the purpose of pursuing the study of the subject chosen by them. "I don't think," he writes, "that this is an undue strain on any University." But it is at present an impossible strain. What University to-day is sufficient for these things?

No doubt in the future we shall look more than we have ever done for help from the State. Our Chairman said recently that the Universities, as national institutions, with this larger range of activity, must be given the means to attempt the task. The State will do much, but the State itself in these days is impoverished, and some of its leaders believe, apparently, that the new economies should begin with education! Perhaps we may remember, however, to-day that the pious founder is still with us, waiting, as of old, to have his imagination kindled. It may be that the idea of a University which hears the cry of the time, and is willing to send the stream of its best gifts freely along new channels, may make its appeal to him—or to *her*.

GEORGE H. LEONARD.

THE UNIVERSITIES AND ADULT EDUCATION.

Lectures for the General Public within the Walls of the University.

Second Paper.

In his preface (1843) to the translation of Huber's *The English Universities*, Francis Newman wrote:

"To form a very high conception of the dignity and vocation of a University, even higher than anything that can immediately be realized, is the way to ennoble the Institution itself."

"In my apprehension, England needs her Universities to assume a place of intellectual, moral and spiritual superiority, such as shall lift them entirely above the dense clouds of Party. They should move in a higher, serener, atmosphere, unaffected by its storms. Reverenced by all, they should restrain all and unite all. To employ Science and Religion as a tool for the passing convenience of State-Policy, appears to me a high desecration: I must therefore deprecate the idea, that, because I utterly disapprove of their being Tory-fortresses, I desire them to be engines of Whigs or Radicals."

"Political Wisdom must rest upon a broad surface of History, and be deeply grounded on a knowledge of the moral, social and spiritual nature of man. It can be no fruit of the genius of an individual, but the net result of the experience of ages and of the activity of ten thousand intellects; and, as such, it would diffuse itself not as a set of propositions based on the authority of a few eminent Professors, but as a spirit breathing through the whole minds of those who have access to its abode. Now this is the political side of the ideal, which I form of the Universities: this is, I think, the political part which the Nation needs them to play. Such a Function is essential for the permanent welfare of the Body corporate; and it seems impossible to point out any other national Organ, by which the function could be executed."

Nine years later (1852) John Henry Newman, in his lectures on "The Idea of a University," while limiting the scope of a University to "the diffusion and extension of knowledge" and leaving to other academies "scientific and philosophical discovery," defined University training as "the great ordinary means to a great but ordinary end; it aims at raising the intellectual tone of society, at cultivating the public mind, at purifying the national taste,

at supplying true principles to popular enthusiasm and fixed aims to popular aspiration, at giving enlargement and sobriety to the ideas of the age, at facilitating the exercise of political power, and refining the intercourse of private life."

In the minds of the two Newmans, a University was or should be a " two-handed engine " for the realization of these purposes—the one, its spirit revealed in its teaching " breathing through the whole minds of those who have access to its abode " ; the other, its spirit breathing through the written word of its members.

In the last forty years especially, Universities have enlarged this view and have step by step realized that they have direct duties to the adult population around them. The nature of those duties can hardly be better expressed than in the quotation I have just given from John Henry Newman, " raising the intellectual tone of society," " cultivating the public mind," " purifying the national taste."

Lecturing and teaching outside the walls of the University was the first method adopted ; it was organized under the name of " University Extension." By means of Summer Schools within the Universities large numbers of adult students receive direct inspiration from the Universities. The extension movement though often taunted with being " second rate at second hand " has achieved much ; its strong points and its weak points alike have provided invaluable experience to other movements, such as the Workers' Educational Association and the Tutorial Classes.

The Tutorial Classes are an outgrowth from the W.E.A., by means of which the Universities both within and without their walls, are each year taking a larger share in adult working-class education.

A Tutorial Class, of which one of the fundamental principles is its limitation to thirty members, is held in a University building whenever it is easily accessible to the members of the class. University teachers are co-operating by combining Class Tutorships with their regular academic work. Summer Tutorial Class Schools are held within University buildings and many of the lectures are given by University professors.

It is clear that both University Extension and the Tutorial Class system, although mainly active without the walls of the Universities, become more effective when closely linked with the Universities, and when from time to time their students actually visit and work within the University buildings. It will be, I believe, a source of added strength to the Universities themselves as well as to University Extension and to the Tutorial Class movement if University professors, readers and other members

of the academic staffs, can take, from time to time, not necessarily every session, an active part in these movements.

It is not every professor or every reader who possesses the special qualities needed for this work. Only those who possess those qualities should be elected for it. The danger lies in men becoming merely and entirely Extension lecturers or tutorial class tutors. Most of the weaknesses of University Extension have been due to this. To staff the Universities so that some members of the staff, possessed of special aptitude for the work, shall be able to give part of their time to regular University teaching and part of it to the teaching of adults, whether within or without the walls of the Universities, is one of the many urgent problems that have to be faced.

It is a problem that can only be solved gradually; its complete solution demands a large supply of suitable men and women and the necessary resources from which to pay them. It will always be possible to draw for this work to a certain extent upon the large number of University graduates whose main occupation and whose inclination leaves them sufficient leisure to undertake such work.

These considerations apply equally to the movement with which this paper is specially concerned—Lectures for the General Public within the Walls of the University. Within the last seventeen years several English Universities have been developing a system of lectures for the general public. I have noticed its progress to some extent elsewhere, but I am only intimately acquainted with it in London. Of the London development I must therefore speak.

The general objective was that expressed in the paragraph already quoted from John Henry Newman, with the difference that while the attendance at public lectures of the undergraduate and postgraduate students of the University is welcomed, these lectures were at the outset mainly arranged to meet the needs of adults, irrespective of class, who had intellectual interests. The movement was regarded with a good deal of scepticism by members of the academic staff; it was said that the London public generally had no intellectual interests and that the few who had would not come to public lectures, and indeed did not need them. It is true that when the movement began announcements of public lectures in the newspapers met with little or no response. The problem, therefore, was—how to find the members of the General Public who were likely to want such lectures.

A beginning was made on quite a modest scale with two sets of

public lectures for which endowments had been provided. The Newmarch endowment provided for six public lectures on economic questions: the Barlow Fund for twelve public lectures on Dante's "*Divina Commedia*." The public likely to be interested in each case was clearly different.

Lists of individuals, of societies, of firms, were accordingly drawn up, and notices of the lectures were sent out after these lists had been settled by careful scrutiny. The effect was immediate, and in the first year of organized effort, the attendance at these lectures was more than four times the number ever reached before. What was even more important was that the lecturers found they were getting the right people, as indicated by the questions raised and the suggestions given. The names and addresses of all who attended were taken. The next session the lists were further revised, and included the names of all those who attended in the previous session. In the case of the Barlow lectures, it was mainly a matter of adding names; but seeing that in one year the lecture deals with textual problems, and in another with such subjects as "The Psychology and Metaphysics of the *Divina Commedia*," it is clear that there is opportunity for interesting and attracting different persons from year to year. For the Newmarch lectures it is necessary drastically to revise the list each year. For instance, "Fluctuations in the Returns on Investments" is a subject attractive in the main to members of the Stock Exchange and of financial firms, while subjects like "National Economy" or "Economics and Some Problems of the Day," given during the war, attracted a large number of the general public by announcement in the papers, and a not inconsiderable number of civil servants, to whom special announcements were sent. The number of endowments available for public lectures has been increased by the benefaction of the Rhodes Trustees for lectures on Constitutional Law and History (mainly of the Empire), by the institution of the annual Creighton History lecture, and the utilization of the income of the Jevons Fund for a course on economic questions.

These few endowments made it possible to make a start with a movement in which comparatively few had faith.

After the second year of organized effort, offers of public lectures began to come in from members of the staff, from former students, and from persons unconnected with the University.

Some of these last were out to grind certain axes of their own, or to proclaim some particular dogma of political or religious faith, but the majority recognized that the University should be "left entirely above the dense clouds of Party," and should, "unaffected

by its storms," "restrain all and unite all." That, at all events, has been the principle that has guided the effort with which University College, London, has been specially identified: by careful adherence to it, the movement has grown in power and in usefulness. It is not easy to obtain invariable adherence to it, for almost any subject may, by its treatment, become an expression of mere partizanship.

There have been rare occasions when a lecturer has abused his privilege: the remedy is to leave him out of any future programme.

In the course of the seventeen years of work, the University has come more and more to be recognized as the "forum" for lectures addressed to all sorts of adult audiences who have intellectual interests.

The announcement to the persons, societies and firms on the lists still continues, but the whole movement is now sufficiently recognized for the Press to take notice of it, and for the public to look to the Press for forthcoming arrangements.

As the movement grows, its possibilities become more evident. Apart from the endowed lectures, the earlier public lectures were generally single lectures, and they still predominate: but year by year the number of courses increases. A course may be given by a single lecturer or by the co-operation of a group of lecturers. For example, during each of the last two sessions, a course on "The Life and Art of the Ancient Greeks and Romans" has been organized. These two courses included the following topics: Greek Science, Greek Religion, Greek Painting, Greek Terra-Cottas, Greek Coins, Greek Medicine, Character and Expression in Greek Art, the Social Life of the Greeks, Greek Agriculture and Industry, Greek Commerce, Tragedy and Primitive Art, and like subjects for the Romans. They were given by Profs. Butler, Ernest Gardner, Percy Gardner, and Toynbee, and by Messrs. Cary, Norman Baynes, Bell, Earp, Marshall and Singer.

In view of the decline in classical teaching in the Schools, and especially of Greek, steps were taken to interest the schoolmasters and mistresses of London in Schools of all grades in the course. The response was most satisfactory, and the second course, given in the session just ended, was arranged at the request of those who came to the first.

Similarly in the Faculty of Science, courses by groups of lecturers on the history and development of the several branches of Science have been organized. Sir William Tilden has just given three on the "History of Chemistry in the Nineteenth Century." Such lectures as these attract the staff and students of all Colleges

of the University, as well as the general public, to such an extent that the lecture halls are not large enough to hold all who come.

There is yet one other aspect of work that public lectures serve to enlarge to the great advantage of the adult population. Notwithstanding the dictum of John Henry Newman, every University now seeks to promote "scientific and philosophical enquiry," which is, I think, a better phrase than the much-abused word "research." The progress of knowledge during the nineteenth century is in itself a remarkable story, the progress that is now being made from day to day needs recording and summing up from time to time in language that is intelligible to the educated general public. This does not necessarily imply what is called "popular lecturing."

The London Colleges have done a good deal to this end: the University, aided by a grant from the London County Council, is supplementing their efforts by arranging special advanced lectures. These are generally given by men of letters, scientists and jurists from other Universities and other countries. They appeal very largely to the postgraduate student and to members of the staff, but there is generally a fair attendance of persons outside this group, whose occupations or hobbies are such as to make them qualified, and therefore interested hearers.

It was shown during the war, that in a national crisis, public lectures by members of the staff as well as by other thinkers, were in a very special way helpful to the community within reach of the University.

Lectures on the progress of the war served to keep before the public the magnitude of the issue and rescued them from undue depression after reverses and failures: other subjects were "War Finance," "Economic Problems after War," "Physiology of Food and War Economy"; the destructiveness of the war was brought home by lectures (with views) on the cathedrals (Marne and Aisne district): the problems of our soldiers and sailors by courses on "wound shock," and the like.

This perhaps is enough to indicate the nature and scope of the work. It cannot be done in a haphazard fashion; it requires the utmost care and attention as well as the help afforded by about half the time of an effective secretary.

The expense will of course vary with the extent of the effort. That the effort is worth making I am convinced. Its results may be judged to some extent by the test of numbers; in the session 1907–8 the third year of the organized effort, there were thirteen public lectures given, all by members of the academic staff, and the total attendance of the general public was just under 1,500.

Last session (1920–21) forty members of the academic staff gave public lectures, and thirty-nine other persons. There were forty-three single lectures and thirty-four courses of two or more lectures (the average number was five). These lectures were attended by nearly 6,000 individual members of the general public ; in the session that has just ended the number of lectures has been slightly greater and the number of persons attending exceeds 7,000.

These are the numbers for University College alone ; I have not yet received the numbers from the other Colleges.

But the test of numbers is not the only thing. The result of the effort is that the influence of the University is extended and the cultivation of the public mind is proceeding.

Those who do not come to the lectures are impressed by this kind of activity and believe that there " is some use in a University after all," as a prominent man of business said to me the other day.

For the members of the staff who take part there are undoubted advantages, for they learn to understand the larger public and to be able to look at their work from a new angle. It is in large measure an act of faith ; it enables the Universities by a form of activity not contemplated by the Newmans to cultivate the public mind and to purify the national taste.

GREGORY FOSTER.

THE UNIVERSITIES AND ADULT EDUCATION.

Third Paper.

THE University of Adelaide reaches adult audiences through three channels—(*a*) an annual lecture delivered at the close of the year on the occasion of conferring degrees; (*b*) three courses of extension lectures delivered by University professors during the winter months, each course consisting of three lectures; (*c*) various courses, which extend over the whole academic year, under the control of the Joint Board of the Workers' Educational Association.

This Association makes a serious and sustained effort to educate the adult, and therefore deserves the attention of the Conference.

Since 1917 the W.E.A. movement has been on its trial. Many of us had doubts at first. It seemed unnecessary to found a new organization in Australia when there was a real ladder, with every rung intact, from the State School to the University. Any boys or girls of promise could, with no great difficulty, obtain bursaries which carried them, free of expense, through the longest course. Our doubts have been to some extent justified. In the main, the W.E.A. classes do not attract the young, at any rate of the male sex. There is an air of middle age about the lecture room. We are dealing with men and women who, had they been born in the twentieth century, would in many instances, at least, have been taking University courses without the existence of the W.E.A.

Few who have watched the result of free, compulsory, and secular education in Australia can avoid a feeling of disappointment. The average child who leaves at fourteen, shows not the slightest desire to continue study of anything, unless it be of football results, cricket averages, and betting odds. If he reads at all, his pabulum is Garvice or Nat Gould; and the "movies" have saved him even this trouble. In condonation, it must be remembered that the Australian climate tempts the young out of stifling rooms into the cooler streets and parks, and that there is plenty of money to pay for such aids to education as picture-shows, musical comedy, and revues. Even the English boy reads less in summer than in winter, and the inclement skies of Scotland have had something to do with her enviable position in the world of science and letters.

To return to the W.E.A.—the most popular subject is Political Economy. This subject is usually taken, in the city, by the Director of W.E.A. classes. His position is not a happy one. He is between the devil and the deep sea. On one side stands the capitalist, a possible benefactor of the University, especially in these days of high taxation. University Councils do not care to shelve complaints of dangerous doctrines taught by the lecturer in Economics. On the other side are the Marxians. To suggest that several theories of Political Science require examination is to sin against the light. The unfortunate teacher thus finds, within the Trades Hall, a small but noisy party arrayed against him. But the classes go on, and the members, suspected by employers and employees alike, do their work undismayed.

Ten per cent. are really good students. These, taking advantage of scholarships founded by the Joint Board, proceed to the University Diploma course in Political Science. It is whispered that certain enthusiasts in the Trades Hall are determined that this Diploma shall be won by all aspirants to Parliamentary honours. Here is an ideal which might well be aimed at elsewhere.

A marked characteristic in all classes is the enthusiasm of the students. Everything is so different from one's experience of the ordinary undergraduate. He is anxious only to take down such matter as is certain to be set in the annual examination, and then he hopes to be done with it all for ever. There is little or no longing to learn and understand. The University is a "shop" (the term actually used in Melbourne) where you are apprenticed to your trade of teacher, lawyer, doctor, engineer, and so on. But the atmosphere in the W.E.A. class is one of eager enquiry. You are riddled with questions, and, for once, evasions profit you nothing. You plead guilty to ignorance, and promise to look the matter up. If you do not, next time you meet the class, you are put to shame. One may safely say that nowhere else in the University is better work being done by teacher and taught. I do not mean that many of these students are of first-class calibre as judged by the standard of old Universities; but some of them, had they enjoyed our opportunities of acquiring facts, would have left us far behind in the race. As it is, within narrow limits, they are very good indeed, and (as I have said) the average appreciation is far higher than in the ordinary University class-room. All the more credit is due when we remember the terrible distractions of these terrible years, not to mention epidemics of strikes and influenza.

But the fact still remains that we have not attracted the young

nor as many genuine "workers" as we hoped to do. In the English Literature class, for instance, there were far more mistresses than maids, and the men, who numbered only some 20 per cent. of the whole audience, were more often workers with head than with hand.

It was pleasing to find that fourth-year classes were asked for and were well attended, but it was, on the other hand, disquieting to see little sign of new blood in the lower years. One was led to fear that the demand might gradually dwindle away, and that we had already reached the majority of our possible *clientèle*. I sincerely hope that this fear will prove to be ungrounded.

It should be clearly understood that the courses of the W.E.A. are not mere entertainments for winter evenings. The work is taken seriously, and the students are expected to read for themselves during the week. Essays are required and regularly done by the best members of the class. At the end of the three-years' course, a certificate is given to those who have attended a high percentage of the lectures and have done a definite number of the essays to the satisfaction of the tutor. It will be plain then that the system is far superior to the normal system of Extension Lectures.

As far as Australian Universities are concerned, it is desirable that professors should take up the work of the W.E.A. The drudgery of correcting essays, with the exception of a few by students of outstanding excellence, could be handed over to competent lecturers. These W.E.A. students deserve and ought to have the best qualified teachers in the University. Professors who have made the experiment find that their time has been well spent, and that their efforts are much valued. If it came to be thought that only second-rate teaching was given in the W.E.A. classes, the University would learn to regret a neglected opportunity, and, worse still, would discover that it had lost valuable supporters in the ranks of Labour.

Occasional single lectures, open to the general public, are given. These usually deal with topics of up-to-date interest, such as Bolshevism, the Peace Terms, Reparations, etc., or with some new literary work of an English or foreign writer.

H. DARNLEY NAYLOR.

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The detailed statistics for the various classes in 1920 are as follows :—

City Class.	Year	No. on Roll.	Effective Students.	Average Attendance.
Economics I. . . .	4	54	41	30
Eng. Lit. I. . . .	4	60	46	31
Psychology . . .	3	16	14	10
Economics II. . .	1	44	29	23
Eng. Lit. II. . . .	1	35	28	20
Pol. Philos. . . .	1	40	30	23
Eng. Lit. (Norwood) .	2	28	21	17
Eng. Lit. (Mt. Gambier) .	3	14	12	8
Social Philosophy (Gawler)	1	24	20	14

During the month of March, 1921, Free Public Lectures were delivered on the following subjects :—" An Introduction to the Study of Shakespeare " ; " Armaments' Firms and War " ; " Scientific Research and Productivity of Work " ; " International Conferences " ; " Literature and Democracy " ; " Our Debt to Small Nations " ; " A Study of Society " ; " Industrial Fatigue."

THE UNIVERSITIES AND ADULT EDUCATION.

Fourth Paper.

EXTRA-MURAL WORK.

A MOST significant element in the modern history of education is the appeal to the Universities to extend their teaching operations to students outside their own walls. The appeal has come from all classes. It has raised problems both of administration and of education, problems which are being met in a variety of ways corresponding to the various needs of the appellants and to the different conditions of the Universities. It is unnecessary to go into the history of the movement, and impossible within the limits of a short paper to discuss all or nearly all the problems. I shall confine myself to questions arising out of extra-mural work, strictly so called—that is to say, lectures and classes conducted by a University outside its own local borders, needing an organization which covers the range of several faculties, additional to the organization which is required for internal purposes, and deals with students who, in the great majority of cases, cannot "come up" to the University or get into direct personal and local touch with it. And I shall consider only those questions which arise directly in the University itself—questions of administration, supply and tests of teachers, relations with the students, and finance: and I shall rather deal with general principles than attempt any account of how various Universities are actually handling these problems.

The first problem which confronts us is the fundamental problem of the relation of the main objects of a University to what we mean by University extension. What are the main objects of a University? How do we conceive them? Let us summarize these objects in one phrase as the Advancement of Knowledge: or shall it be the advancement of learning? The alternative suggests that the first phrase involves an ambiguity. Do we mean by it the advancement of the boundaries of the known? or the increase of the number of knowledgeable people? the conquest of further regions of truth? or the raising of the general standard of education? The answer is that we mean both. It is the function of a University both to extend the boundaries of achieved knowledge, and to promote the extension of higher education. The demand upon the Universities that they should greatly

increase their activities in the latter function enforces the obligation of considering how far they can do so while maintaining the former in full operation. Nor is this merely a question of research on the one hand and teaching on the other. The separation of teaching and research as into two different departments would be fatal to the proper exercise of the functions of a University. In general, there should be a close co-ordination of the two lines. If the teachers are to be doing work worthy of University standards, they must be researchers and have leisure for research: and it is scarcely less necessary that, as a general rule, those who are engaged on research should take a part in the teaching. The real question is how a University shall largely extend the area of its teaching function, and at the same time secure for the teachers that amount of leisure and freedom, which shall enable them to pursue research studies in their own branch of learning, and not merely keep abreast with the progress of knowledge, but be themselves active promoters of that progress. Only if that problem is considered and solved, can a University properly meet the great demands now made for University extension.

I am assuming that the Universities ought to meet this demand: nor is it likely that this assumption will be seriously combated. The experience of half a century of University extension, from the small beginnings of local lectures to the wide expansion of the system of lectures and tutorial classes throughout the world has convinced most of us that the demand is both widespread and genuine, that the attempt to meet it has been attended with results of considerable educational value; and that, with inevitable ups and downs, there has been a steady improvement of methods and eagerness of response. The old conception that a University is concerned only with the promotion of education and research within its own walls has yielded to the reiterated appeal from numbers of would-be students whose circumstances make it impossible that they could enter the walls of the University. There is now probably no University of standing which does not recognize a duty to this class.

What then are the conditions requisite for carrying out this duty effectively, while maintaining in full efficiency what may be called the central work of the University?

I should classify these conditions under the following heads:—

(1) Administration.
(2) Supply, appointment, and qualifications of teachers.
(3) Finance.
(4) Relation of students to the University.

(1) Administration.

The special character and importance of this department of the University make it desirable or rather essential that it should be under the management of a Board constituted for the purpose. The different constitutions of Universities will prescribe the actual form which this Board should take. But it should in any case rank in dignity and responsibility with the main administrative bodies within the University. It should be so constituted as to be in direct relation with the principal Faculties, and should have the duties and powers which are commonly assigned. In its control of the whole extramural work, its range will cover the range of several, if not all, of the Faculties ; and it should therefore have among its members those who are qualified to speak on behalf of at least the more important Faculties. In this way the necessary relation to the University will be maintained. But it is also of the highest importance that it should be in close relation with the students for whose interests it is responsible. It should therefore include on its roll an adequate number of representatives of the local or general bodies in whose hands will lie the local organization of the work. The special form in which this representation may be secured will vary in different Universities ; but that it should in some way or other be secured is essential if the Board is to be kept in living touch with the varying needs and problems of the work.

It will of course be necessary that there should be a central office with an adequately paid staff. In particular, the post of Secretary is one of critical importance ; and the Secretary of the Board for Extra-mural Studies should rank among the principal officers of the University, as is already the case in some Universities. He should be a full-time officer with adequate remuneration.

The Local Organization is hardly, if at all, less important. The two main branches of University Extension, as hitherto developed, the Local Lectures and the Tutorial Classes, have depended for their vitality and success to a very large extent on Local Committees in both cases, and in the latter on the Workers' Educational Association. The vigorous assistance of such bodies is essential. The whole of the local organization must inevitably be in their hands. It is through them that are formed connexions with Local Education Authorities : and through them both the organization and representation of the students must in the main be secured. Here again there will be variety of constitution in different localities. But in all cases there should be

representation of Local Education Authorities and of the students. It is from such Local Committees, probably through a wider organization of the Committees themselves that representatives should be obtained to serve on the University Board of Extra-mural Studies.

It is a question which deserves careful consideration, whether the Board of Education in England, and the corresponding authority elsewhere should be directly represented on the University Board. In any case it will be convenient and even necessary that the two Authorities should be in close touch. But the exact form which their relation should take would best be left to further experiment.

(2) Lecturers and Tutors.

The Board of Extra-mural Studies must be solely responsible for the appointment of the staff. This point needs no labouring. The whole character of extension work depends on its being recognized on all sides as the work of a University ; and a primary condition of such a recognition is that the teaching staff should come with the full recommendation and authority of the University.

The same consideration makes it essential that the teachers should themselves be members of the University which appoints them, or some other University, and have had its full training, and have attained a high standard in the subjects which they are appointed to teach. The differentia of University Extension is that it offers teaching of University quality, whatever may be the initial standard of the students. That quality depends wholly upon the teacher : and it is distinguished by being based upon first-hand study of the subject in original authorities, and by bringing the student into touch from the beginning with such first-hand authorities. It is obvious that this result can be secured only by making sure that the teacher has himself been trained in this distinctive method of study. No brilliance of exposition or attractive power can dispense with this solid basis, or compensate for the lack of it. For want of it, our lectures and classes will fall into the category of the popular lecture with which they are often confused. It secures the opportunity for all students, of serious and progressive study, and an unfailing stimulus to intelligent and truly educative reading.

It follows from this consideration that the members of the staff should be able to maintain a close connexion with the University and its Colleges, where such exist. It will be desirable that at

least some of them should be actually engaged in intra-mural work. The number of these can never be large, nor can they be expected to continue to act in both departments for any considerable time. But the presence on the extra-mural staff of a few members who are engaged in intra-mural work will emphasize the general unity of the activities of the University, and at the same time foster in the other members of the staff, who are wholly engaged in outside work, a lively sense of their own close relation with the main body.

But it is inevitable that the majority, and particularly the senior and more experienced members of the extra-mural staff, should be wholly occupied with that work. It is therefore the more important that special provision should be made in their case for keeping them in touch with the resident University, with the progress of knowledge there, and the personalities of the resident staff. The conditions of extra-mural work dictate that it should be carried on chiefly in the six winter months. The summer months can therefore be reserved for study and the preparation of lectures: and every opportunity should be given to the staff of carrying on some part at least of that study within the precincts of the University. It would be desirable, in addition, that from time to time extra-mural lecturers should be called upon to substitute a period of intra-mural teaching for their regular work outside. By such measures their own freshness and progress will be maintained; and it is already a matter of experience that they in turn make valuable contributions to the improvement of methods of teaching in the University itself. It has also been found that a period of teaching in the extra-mural department is valuable training for those whose main work is to be conducted within the walls.

I have laid great stress on this condition of extra-mural teaching because I believe that only the thorough adoption of this high standard and the maintenance of such an intimate connexion with the resident University can secure a proper standard of teaching and work. Only if such a standard is secured can we justify the undertaking of such work by a University or enforce the claims, which must necessarily be made, for the large amount of laborious support which it demands from voluntary and official Local Committees, and for the financial assistance without which it cannot be carried on. We must see that we offer what is at once worthy of a University and of full value to those whose demands we undertake to meet.

The important question of the supply of teachers arises directly out of the foregoing considerations. At first sight it might appear

that the high standard laid down increases the naturally great difficulties of supply. And to some extent it is so. But there are balancing considerations. The extra-mural work of the University is attractive to a number of young men, if only as a temporary experiment. To make it attractive as a permanency it must show the character of a permanent profession, with reasonable prospects of an adequate livelihood in itself or as introductory to other avenues of employment. Even in the very incomplete organization of the present and the past, such a character has to some extent been developed. In the University with which I am best acquainted more than half of its Extension Lecturers have succeeded to Professorships in Universities and University Colleges. But this professional character needs strengthening, not only by emphasizing the close connexion with the resident University on which I have already insisted, but by the further organization of the staff, with graded posts, and adequate salaries, with a reasonable provision for permanency and progressive remuneration. I have little doubt that if we can secure a fair measure of professional stability we shall attract a sufficient number of well-qualified men to meet even the steadily increasing demands of the work. I should lay down the condition that the salaries open to merit should roughly correspond, stage for stage, with those which are gained by intra-mural service ; and that all permanent posts should be pensionable on the same terms as those within the walls.

This brings us to the question of finance.

(3) Finance.

It is not too much to say that the development of the extra-mural work of the Universities has been very seriously hampered by the difficulties of finance. As in other forms of higher education, it has been found impossible to make the students pay by fees for the education they receive. The Universities have always been straitened in their capacity to meet the financial claims arising from the great and rapid development of the range of internal studies, and have had little to spare for this new interest. The movement has had to depend very largely on voluntary contributions in the main raised by Local Committees. Of late years Local Education Authorities have begun to take a share, in some cases a large share, in bearing the burden ; and of late years the Board of Education has given generous assistance to Tutorial Classes, and made some provision, though under difficult conditions, for Extension Lectures. The direct contributions of

Universities have varied considerably. Something, no doubt, has been gained by the large proportion of the total expenditure met by voluntary contributions: it has stimulated interest, emphasized responsibility, and tested the genuineness of demand. But these advantages have been largely balanced by the inevitable precariousness of such a source of revenue. The dependence upon voluntary contributions tends to emphasize unduly the popularly attractive element of the instruction, to make systematic arrangement and sequence of courses difficult, to encourage excessive resort to short courses and frequent changes of subject, and in other ways to impair the educational value of the system. In addition to these disadvantages must be reckoned as still more serious the difficulty which has been found in providing stable and adequate remuneration for the teaching staff, on which it may be said that the permanence and standard of the whole system depends. Experience has shown that while it is highly important to maintain in full vigour the voluntary interest in and support of the movement in every locality, sufficient funds should be provided by the Universities and by the Public Authorities, both central and local, to ensure the requisite stability of the staff, to meet the cases of poor districts, and to provide the means for propaganda and new ventures.

It would not be possible within the limits of this paper to examine in detail the method by which such funds should be provided. But there are some general principles which may be suggested.

(1) The function of the University being chiefly to maintain standards and to provide an adequate staff of teachers, it is important that it should have at its disposal funds which would enable it to equip a central office, to guarantee minimum stipends, and to provide pensions. It is probably true to say that no University of the United Kingdom, perhaps no University represented at this Conference, could meet this call from the funds already at its disposal. It requires either fresh endowments given for this purpose, or adequate contributions from Public Funds. The conditions of these contributions require careful consideration. But it must be claimed that extra-mural teaching has become an integral part of the duty of Universities, and that in calculating the amount of State grants required by them, full attention should be given to this department.

(2) *Local Authorities.*—Some support has already been given by many Local Education Authorities to the main forms of University Extension, and some authorities have undertaken full responsibilty for the local arrangements. It may be hoped that

this practice will spread: but it is of the utmost importance that, even so, Voluntary Committees for the promotion of University Extension should be maintained in full vigour. The Board of Education already invite the Local Authorities to take account of provision made for higher education in their districts, as a basis for their claims for central assistance. The importance of their interest and support is manifest. It is highly important that in providing this education the Universities should have skilled advice on the conditions and requirements of the various localities. It is scarcely less important that the higher education so provided should bear relation to the other stages of elementary and secondary education in the districts. And it is through and with the co-operation of these authorities that voluntary interest and co-operation can be best secured and encouraged. Even a moderate financial contribution would secure a sense of responsibility in the matter, and might be expected to be a powerful incentive to voluntary effort and subscriptions. Already great municipalities have taken a most important part in converting Local Lectures Centres first into Colleges and afterwards into Universities. With the definite recognition that the Local Authorities have responsibilities in this stage, as well as in the earlier stages of education, we may hope to see further examples of such developments.

(3) *The State* (*Board of Education here*).—The Treasury or the Board of Education, or other authority for administering public funds for the purpose of education, provide the third source on which the finance of extra-mural work depends. As I have already indicated, it is desirable that any grants made from this source to Universities should take full account of this department, and should enable a University to meet the financial claims which are properly laid to its charge. The relations between the central State Authority and the Local Education Authorities are perhaps outside the scope of this paper. But it may be suggested, in passing, that it is of great importance to encourage the initiative and sense of responsibility of the Local Authority, and to leave larger freedom in the ways in which such an authority makes provision for this and indeed for other kinds of education while a general supervision and testing is maintained. There have been of late years welcome signs of the recognition of this requirement on the part of the Board of Education.

(4) A fourth source of financial support is the voluntary Local Committee for University Extension. These bodies have in the past done, and are still doing, invaluable work in raising funds. Without such aid the movement could not have developed. But further: the efforts necessary on the part of these Committees

have in themselves powerfully stimulated interest in the movement and contributed to the maintenance of a high educational standard. It is important that the enlistment of voluntary effort for this and other purposes should be steadily encouraged, whatever further assistance may be gained from other sources.

It is inevitable that in this review of the financial conditions of University Extension I should have had in view principally the conditions in England.

(4) Local Organization and Students.

It is fundamentally distinctive of adult education that the student should have the utmost freedom of choice both of subject and teacher, within quite easily defined limits. Those limits are that the subject should admit of scientific or methodical treatment, and that the teacher should be approved by the University as qualified to give such treatment. It is still a subject of discussion how far such freedom of choice can be allowed in other stages of education ; but there is no difference of opinion that at this stage it is indispensable.

It follows from this that whatever degree of support and consequent control may be required from the other bodies interested, the University, the State Authority, and the Local Authority, all such control should be carefully devised so as to be consistent with this principle, and to give it full effect. Further, it follows that great importance must be attached to the formation of Local Committees in close connexion with the various classes of students, and directly representing them, so that the wishes and opinions of the students may find direct and responsible expression.

By this means, and by no other, we shall secure that sense of personal interest and enthusiasm which is essential if the many difficulties which attend the adult's prosecution of study are to be overcome, and is of the utmost importance to the arousing and development of the intellectual activity of the student himself.

For it cannot be too strongly urged that the educational value of study, above all in the case of the adult, depends largely on the emotional elements which are enlisted in its service. The love of knowledge and truth for its own sake is a delicate plant, difficult of nurture. More common interests must be used to foster it. The sense of fellowship in a class, of loyalty to a teacher with its quick fruit of personal friendship, of desire to communicate what has been hardly won, of intellectual interest in discussion, and the mutual respect and forbearance which is so developed, are all not only in themselves valuable and formative elements in

character, but powerful stimulants to right method and solid achievement in study. And the root from which all these spring is initial freedom of personal choice and direction. There must be free co-operation for the common aim between committees, students and teachers. The controlling authorities must act, and be recognized as acting, so as in every way to elicit and foster this fundamental condition.

It is not possible here to go in detail into the question of the methods of organization of the Local Committees or of the classes. They have been fully dealt with in the Report of the Committee on Adult Education, and in other official publications. I select one or two subjects which strike me as being of special importance.

First as to the choice of subjects. I wish to emphasize the claim that the group of students, when formed, should have large freedom of choice in this matter, on the principle which I have already stated. Lack of courage here would be particularly disastrous, as suggesting lack of confidence in thorough methods of study. It is to subjects involving a large amount of controversial matter and challenging partisan interests that the practice in the application of such methods is peculiarly needed. As long as the subject admits of scientific treatment, it is a proper subject for adult education. Nor can we demand that either students or teacher should be impartial in the sense that they have no formed opinions on the subject. What must be required is the honest scientific spirit of free and fair enquiry and discussion: if this requisite is secured, the lesson in the true methods of study will be of the highest educational value, and the intellectual and moral discipline will be gained almost in proportion to the controversial nature of the subject.

These considerations emphasize the importance of discussion, and of the discussion class as supplementing the lecture. In both the two main branches of University Extension, the Local Lectures and the Tutorial Classes, the discussion class has always been an integral part of the system. But whereas in Tutorial Classes discussion has had full place, in the Local Lectures, for various causes, the discussion class has in some centres tended to diminish in relative importance and to enlist a decreasing number of students. It is noticeable, however, that in my own University this falling off is most marked in the case of short courses of lectures. In the long courses the classes are larger and better attended: the response to the higher standard is marked. It would be untrue to say that there is no educational value in the lecture by itself; the systematic presentation of a subject, and the reading and study which it is presumed that a considerable

proportion of the students undertake, have a steady and valuable educational effect. Even the outer fringe, who do little more than attend the lectures, gain much for themselves and form a recruiting area for more thorough students. But it is certain that the discussion in class affects this value so definitely as to make it of a decidedly higher quality. For this reason it is to be urgently desired that every effort should be made to increase the number of students attending the class. In reference to the above remarks on the nature of the subjects to be studied, it is obvious that it will be less difficult to treat of controversial subjects where there is free discussion in class. The absence of class study may therefore seriously limit the kinds of subjects undertaken.

Connexion of Individual Students with the University.

In conclusion, I would briefly call attention to the subject of the connexion between the University and the individual student. It is a common experience that in all branches of University Extension there occurs a quick and strong development of a sense of loyalty to and interest in the University which provides this form of education. This is in itself a powerful educational instrument, and should be encouraged by all legitimate means. The use of certificates and diplomas issued by the University to mark definite stages of prolonged study is one such means. It has in some cases been possible so to arrange the courses of study and the tests which are applied as to supply evidence of attainment sufficient to be recognized as establishing a claim for exemption from the whole or part of the matriculation examination: and under certain conditions it has been possible to allow to the students of fully organized Local Centres the privileges of affiliation.

But in addition to these local privileges, as they may be called, the summer meetings and summer schools, which are held in many Universities, are of great value as providing opportunities of short periods of residence in the University and of wide or intensive study, in academic surroundings, supplementary to the regular course of lectures or Tutorial Classes. It is much to be desired that these meetings should be much more fully utilized than they are by the mass of students.

The circumstances of adult students impose a strict limit on the number of those who can go further. But some can: and it is important to make and keep open the avenues for those students who can arrange to prosecute their studies in the University for longer periods. Provision is made for this at some, if not all,

Universities. The principal requisite is that there should be recognized short courses of study, extending over the three terms of one year, connected on the one hand with the student's own previous course of study, and on the other forming an integral part of the studies of the University. The latter provision will secure the important condition that the student will be brought into personal contact both with the intra-mural teaching staff and with other resident students. He will thus gain a real experience of University life and study under fairly normal conditions.

The period should not, unless in very exceptional circumstances, be shorter than one year. Most students will require some little time to accommodate themselves to the strange surroundings and the special conditions of life and study. And while in the case of most of the students whom we are considering their maturer age and settled purposes will enable them to overcome this difficulty more rapidly perhaps than the normal undergraduate, still any period less than a year would be all too short for the purpose. Another condition that I should myself lay down is that they should, as far as possible, join in the regular life of the University, and not be segregated in hostels formed for this class of student. A large part of the educational value of University life depends upon the free intercourse of students with each other, not least of those who are pursuing different lines of study and have their different experiences and views of life. Experience has shown that, if no artificial barriers are set up, such intercourse is easy and natural, however different may have been the antecedents. Among the mass of undergraduates there are no class distinctions; men are taken for what they are, and every one has his chance.

In the above remarks I have not attempted to give a history of the movement. At the Conference held in 1912 a valuable paper was presented by Mr. Marriott and Dr. Cranage which dealt with the history, methods, and organization of University Extension up to that date. Histories of the movement have been written by Dr. Roberts (*Eighteen Years of University Extension:* Cambridge University Press); by Mr. Michael Sadler and Mr. Mackinder (*University Extension:* Oxford University Press); and by Mr. A. Mansbridge (*University Tutorial Classes:* Longmans, Green & Co.). The *Report on Adult Education* (Cd. 321, 1919) is a storehouse of information and suggestions on the subject; and I may be excused for mentioning also the *Cambridge Essays on Adult Education* (Cambridge University Press, 1920).

R. St. J. Parry.

THE UNIVERSITIES AND ADULT EDUCATION.

Fifth Paper.

Extra-mural Work.

In Leeds we should like to spend on Tutorial Classes twice as much as we have spent this year (£930). I hope the time will soon come when we shall be able to spend more than as much again upon this work. If it is thoroughly and sympathetically done, it creates a University atmosphere among small groups of people throughout our industrial, and in some of our rural, districts. But G. H. Thompson, of the Yorkshire District W.E.A., whose shrewd zeal is felt in all its centres, would probably agree with me in thinking that, though it has been harassing to have less money than we need, delay has proved half-sister to wisdom. The work has been consolidated because it has not grown too quickly. "Growth is slow when roots are deep."

Well-rooted, so far as we can judge, are these classes in Yorkshire, alike in the textile valleys, on the coalfield, and in the East Riding wolds. Weavers and engineers, farm-hands and miners, are proving the mettle of their mind by close attention to a chosen subject, by the give and take of discussion and by hard reading of such books as they can command. The sister Universities of Leeds and Sheffield are proud of the thousand students outside their walls, and happy in the new comradeship which springs naturally from our being interested in the same pursuits and from a common reverence for what is beautiful and true. Year by year the range of these united interests widens. Philosophy, Literature, Biology, reveal their significance as the course of a worker's studies leads him back to fundamentals. The gifts and the personality of the teachers draw the students into further quests for truth and open the windows of their minds. Albert Mansbridge sowed, and others have watered to good purpose in our Yorkshire, which sorely needs the inspiration of a spiritual and civic ideal.

Those educational statesmen, like Albert Mansbridge, Bishop Gore, the Master of Balliol, and the present Bishops of Ripon and of Manchester, who planned the Tutorial Classes and linked Oxford with the Potteries and with Wiltshire, made almost unawares a great discovery. They found out, for the good of their generation, that culture can spread without the goad of examinations or

the bait of certificates. This is the capital service which such lecturers as R. H. Tawney, Henry Clay, David Stewart and Norman Walker have done to educational technique. They have proved that you can get an intellectual response without mechanical stimulants and can set going a brisk movement of the mind without what Robert Lowe (with whom be peace) made its mainspring. The Board of Education, which in this business has been wisdom incarnate, has given public money in aid of good teaching without fussy guarantees. Freedom has been justified of her children. Therefore, I for one would regret any invasion of the Tutorial Classes by candidates in search of a degree. We, none of us, know precisely what some of our academic degrees are meant to signify. Would it not be a pity still further to dilute their meaning ? Seventy years ago the famous Oxford University Commission gave a blunt opinion. " What is needed," they said, " is to make the University itself a great place of learning : to bring together the ablest instructors and the ablest students : to enable many who could not otherwise become members of the University to avail themselves of the advantages attached to its training and society We see no reason why the University should go out of its way to confer its degrees on the members of institutions in which such distinctions can never bear the same meaning as when they are attained by those who are really members of the University." *

But a real connexion is possible between the Tutorial Classes and the inner life of the University. This connexion is still too rudimentary ; in some cases it is fairly strong in sentiment, but not organic enough. Just as the Tutorial Class teacher generally gains if part of his working week is spent in teaching degree students inside a University, so would many of the Tutorial Class students gain if they could easily find entrance into the midcurrent of undergraduate life in the University itself. Balliol has done much to make this a reality. Summer schools have done much. But might there not be in the wide and pleasant estate of at least one modern University a College, in the midst of the other Colleges, to which men and women students from the Tutorial Classes could go for a fortnight or more at a time, and where they would receive welcome guidance, mental refreshment, and quiet opportunities for study and discussion, and be admitted to as full a share as possible of the undergraduate life around them ? The time will come, I trust, when thousands of busy workers in the Yorkshire industrial districts will feel that in Leeds and Sheffield they have Universities which are really meant for them as well as for those

* Oxford University Commission Report, 1852, p. 54.

other people (often their own children) to whom fortune has given earlier and longer leisure.

If any one harbours the thought that adult education in England has grown like a gourd in the night, and may soon be nipped by disillusionment, he will find some reason for changing his mind, should he read the educational history of Great Britain. That unfashionable work, *Self-Help*, by Samuel Smiles, for which as a Leeds man I have a shy predilection, would serve as a guide. Adult education has for more than a century been one of the glories of Britain: not only of Scotland and Wales, but also of England, which, from the time of Shakespeare and before, has not in truth been the educationally destitute country which she allows her foreign critics to believe. Thomas Cooper, in the cobbler's shop at Gainsborough, was reading the books which, almost at the same time, Harriet Martineau was poring over, under circumstances of not less formidable difficulty, at Norwich. William Lovett ground at his books in Gerrard Street in the early twenties of last century, just as, a generation earlier, Francis Place had worked through the treatises he borrowed from the small shop in Maiden Lane. Thomas Campbell was fired to found a University in London, which was to have been (as Francis Place's great-grandson, Sir Henry Miers, reminds us) "a real teaching University which should give opportunities for education to all persons of intellectual aspirations," by the example of "a journeyman workman who struggled with many difficulties, and yet, amidst all his difficulties, educated his children well, and taught himself several sciences and languages." I have a little book, evidently bound by the donor, given to C. Dent "by his friend John Jaffray, Bookbinder," which contains many of the pamphlets written by the Chartist Group about 1840. It is filled almost from cover to cover with plans for adult and other education. Well might Goethe in 1827 speak to Eckermann of "the healthy tone of education in England." In the obscure heroisms of England, Wales and Scotland, self-training and self-culture have never ceased to hold their own. As we read the first-hand documents of our social history, we find in many unexpected and humble places

> "among least things
> An under-sense of greatest."

The seventh and twelfth books of *The Prelude* are the mirror of the growth of many a workman's, as well as a poet's, mind. The succession of those who have been undaunted in the pursuit of culture has been continuous among us for many generations, and it will not fail.

Adult education, for the purpose of our discussion this morning,

means the training and self-training of those who cannot give years of their life to residence in a University, but whose minds are of the quality which rewards careful cultivation and who have a love of study and the perseverance to pursue it. As Gibbon said, "Every person has two educations, one which he receives from others, and one, more important, which he gives to himself." To both of these educations the poor and isolated student has a claim. It is our duty to help him in his search for intellectual discipline, given under friendly but exacting guidance, and with the stimulus of comradeship. Such a discipline works on the mind and moulds the character. It makes itself felt, as Newman said, "in good sense, sobriety of mind, reasonableness, candour, self-command, and steadiness of view." *Abeunt studia in mores.*

In the part of England which I know best the interest in adult education, though strong in some groups of people, is by no means general. There are no signs, at present at any rate, of a popular awakening on the scale which has given significance to many religious movements in the past. And yet in the eagerness with which individuals and small groups seek and seize opportunities for self-culture and discussion, there is something of the passion which made the class-meeting among the Methodists. The strongest interest is in the moral questions of life and citizenship.

M. E. SADLER.

THE UNIVERSITIES AND ADULT EDUCATION.

Sixth Paper.

The Work of the Y.M.C.A. Universities Committee and its Permanent Issues.

When for any purpose men are massed together by the million, many surprising facts emerge. Thus in the war-period, the defects of our English educational system were shown by the number of illiterates (especially between the ages of sixteen and twenty) found amongst the recruits. On the other hand, the eagerness of many men for education was proved by their persistent efforts to carry on their own private reading, and by their response to any provision in the shape of lectures, classes and libraries. Obviously the situation thus revealed demanded careful study with a view to a new and adequate national policy of education in the future. But it was also in itself a challenge. Humane influences were never more needed than at a time when men's very faith in civilization was shaken by what the defence of it seemed to involve in squalor, hardship, and butchery. At the same time the idealism which alone made endurance of these things possible quickened in thousands of men the thought of nobler living.

The Y.M.C.A. set out to relieve the physical, social, and spiritual needs of men in camp and trench. Its programme is fourfold, and it did not overlook the intellectual aspect of life, even in such circumstances. From the very first, books were collected and sent out, miscellaneous lectures were given. A small Education Committee was set up at Headquarters under the Chairmanship of Canon W. Temple. When the measure of the opportunity became apparent, the Association appealed at once to the Universities of Great Britain and the foremost voluntary bodies concerned with adult education. A cordial response ensued. Every University (like the other bodies) sent official representatives to a Committee to which was entrusted the shaping of the policy and the provision of the *personnel*. Arrangements with General Headquarters, France, had already been made by Mr. Oliver McCowen and Mr. Z. F. Willis, the Chief Secretaries of the Association in France, whereby the Y.M.C.A. should be regarded as the official agent for lectures to the troops, and this was subsequently expanded to cover a complete scheme of educational work. Sir Henry Hadow was secured as Y.M.C.A. Director of Education on the Lines of Communication in France, and was

subsequently succeeded by Sir Graham Balfour. Professor J. J. Findlay went in a similar capacity to Salonica, and Dr. Alex Hill directed the work in England. Work was carried on in Italy and Malta, in Holland (in co-operation with the Red Cross), and in Egypt and Palestine (through a joint Army and Y.M.C.A. Education Council). In India and Mesopotamia also much was done, but this was in the field of the Indian National Council of Y.M.C.A.'s. Finally a great many lectures to munition workers in the canteen dinner hour were organized. To Dr. D. H. S. Cranage, as Chairman of the Committee throughout, a deep debt of national gratitude is due for his wisdom and self-sacrifice in this service.

For various reasons publicity was impracticable, and few people, even within the Universities, realize what was accomplished. A brief account is given in two brochures published by the Y.M.C.A. after the Armistice. To summarize the bare facts and figures would require far more space than is at my disposal, and I imagine that the Congress desires me rather to draw attention to the bearing of this war-time experience upon the life and work of the Universities in the coming days. But I may perhaps be allowed to quote from the foreword contributed by the Rt. Hon. H. A. L. Fisher to the account of the work in France: "To the Y.M.C.A., and to the Army Authorities in France, under whom they worked, belongs the credit of introducing and developing the largest scheme of adult education which has ever at any one time been launched from this country; and it is satisfactory to know that the pioneer work which was begun by the Y.M.C.A. in the Army areas as far back as 1916, is now upon a larger scale, and in easier circumstances (though the circumstances are still by no means easy), being continued by an able staff of teachers working under the Army Education Scheme." To France alone, 12 sub-directors, 14 assistant sub-directors, 18 staff lecturers, and 141 teachers were sent for the education scheme on the lines of communication. Nearly all were graduates and trained teachers, men and women. The movements of troops made consecutive work difficult, but 75,889 attendances at classes were registered in the various Bases between June, 1918, and February, 1919. The subjects covered the whole range of liberal education and included classics, mathematics, science, history, economics, literature, music, art, philosophy, theology, languages (Oriental and modern), and a number of technical and business subjects, as well as handicrafts. 177 special lecturers went out on short visits, at first to the Base Camps, and subsequently to the Army areas. Again the majority of them came from the Universities, many

senior professors rendering invaluable service in this way. Their subjects were naturally extraordinarily varied, but they found appreciative audiences, especially under shell-fire. The estimated attendances from July, 1918, to February, 1919, in the Base Camps were 689,568. No returns for the Army areas were available. Even when, in April, 1919, the Army took over the scheme of general education in the Base Camps, the system of special Y.M.C.A. lectures was still continued. If the figures for other theatres of war are small, the work there was none the less valuable, for frequently the men sent out by the Universities Committee were used as civilian advisers to a military Educational Staff.

A very effective part of the work was the organization of a library service (under a special committee of which H.H. Princess Helena Victoria has throughout been the untiring and enthusiastic Chairman), hundreds of thousands of valuable books being collected or bought for this purpose, and the development of a music section (under another sub-committee of representative musicians with Sir John McClure, LL.D., D.Mus., as Chairman, and Mr. Percy Scholes as Secretary).

The results that cannot be tabulated are probably the most vital and permanent. A few of these may be indicated ; others will emerge in experience as time goes on.

(1) The willingness of the Universities to participate in this war-time task at first sprang no doubt from a war-time motive. They have always, and rightly, been jealous of assuming responsibility for any kind of teaching that was, in the current phrase, " below University standard." At first blush this enterprise appeared to be outside their proper field. Some of the work would clearly be very elementary. The risk of scrappiness and discontinuity could not be avoided. Even when the approval and assistance of the Army Authorities made a comprehensive scheme possible, and the calling up of men midway in their University course, or just at the commencement or conclusion of it, supplied a large number of keen students of University grade, these dangers still seemed to be present. But it was soon discovered that there is literally no part of the adult population of the country that does not concern the Universities ; there is no section of the community to which they do not owe a service. The provisions of the Education Act, 1918, the recommendations of the Adult Education Report, 1919, the development of working-class educational organizations since the Armistice, and, above all, the revelation during the past two years of the limitation in outlook of the middle classes, have all helped to make this clear. But the work done by the Universities during the War has

illumined the fact that a University standard simply implies sincerity, thoroughness, and persistence in pursuit of truth, whether opportunities are abundant and regular, or restricted and snatched from amidst unfavourable circumstances. It showed them also that a large proportion of the men who will make the nation of the future are bent upon a real culture, and that if the Universities do not adapt themselves to that demand, it will be so much the worse for the Universities, as well as for the nation. In short, the Universities realized in quite a new way their responsibility respecting adult education.

(2) There was a development of the faculty for this kind of work on the part of University graduates and teachers who before had proved themselves only in the Schools or in the University lecture room. There were a few "duds" among those who went out—scholars and humanists, but lacking the real power of putting themselves at the students' point of view or using plain English in the exposition of their subjects. But there were many who were a glorious surprise to all concerned, not excepting themselves. This afforded valuable evidence that the Universities have resources for the national task which they now must face. Their reputation for being filled with "high-brows" and "blue-stockings" was found to be rather a libel. And popularity did not mean banality. Lecturers and teachers were able to give of their best.

(3) This leads to the related point, that the people of this country are ready for what only the Universities can give. A fascinating opportunity has opened up. Democracy and the dons have come to understand and appreciate each other much more fully. This is particularly important in view of the recent growth of suspicion of the Universities among working-class organizations.

(4) A great stimulus has been given to experimental and informal methods. Even University extension lectures and tutorial classes reach only the *élite* (intellectually) of the people. A man who can hardly read may have all the aspirations of the student in him; he may become a most successful member of a three-year tutorial class. The difficulty is with the man who can read, and doesn't, or won't. Yet he may be reached, inspired, guided, and turned to education as a life-long pursuit. It was done in those war-time days. The Universities are called to more adventures in this direction.

(5) A stream of new life is pouring into the Universities. Though the official Army Education Scheme during demobilization developed the plan of sending ex-officers and men to the Universities on their discharge from the Army, the roots of the whole

thing lie far back in the early lecturing campaigns in France. Mr. Fisher has recently stated that of 25,000 students who have thus entered the Universities, 15,000 came from families with no previous opportunity or tradition of University education. This is a fact of the greatest possible significance.

(6) Despite the lack of publicity already indicated—press references practically forbidden, honours lists remarkable for the absence of names connected with this work, no honorary degrees conferred in recognition of this service to educational progress—the public came to know, through husbands, sons, and brothers, of what was being done. The War service of the Universities has made an impression on the country that should be valuable. It has demonstrated the power of the Universities to render practical and national service. It should result in deeper sympathy and more widespread support for their future work.

What are the main issues from this great experiment ?

(1) For the Y.M.C.A. a stronger emphasis than before upon the educational element in its work, and a new friendship with the Universities that will make possible an effective co-operation in providing opportunities for men who need and seek liberal education. Though the Y.M.C.A. Universities Committee as such will come to a natural termination in September of this year, the Association's Department of Education asks the continued help of Universities, especially locally, and offers a field of service among men who must be reached amidst their normal social surroundings.

(2) The President of the Board of Education has throughout realized the value of such a body as the Y.M.C.A. Universities Committee—the most representative body of educationists that this country had ever seen. Obviously it could not in normal circumstances render such a national service as it did during the War, simply because it would be acting only through one organization, the Y.M.C.A., whereas during the War a temporary monopoly was given to that organization among the great part of the nation's manhood. The new Committee on Liberal Education among Adults, will, it is hoped, carry on for the country just that service of mutual counsel and voluntary co-ordination of effort which the Y.M.C.A. Universities Committee effected for the Universities and the voluntary educational associations during the War. The experience gained during the War and the model provided have no doubt influenced the Board in setting up this new Committee, of which all engaged in adult education hope and expect so much.

(3) The development of ideals and methods in extra-mural education is perhaps the chief gain of the Universities from their

common effort during the War. Henceforth "nothing human will be alien to them" within their respective areas. Several Universities have already embarked on definite organization. They have begun to put into practice locally what they learned during the War of the possibility and value of co-operation with all sorts of outside organizations. There is work which they alone can do, but which they never can and never will do within their own walls. Men and women gather together in Educational Settlements, Adult Schools, Y.M.C.A.'s, Y.W.C.A.'s, Village Clubs, Working Men's Institutes, Trade Union branches, Co-operative Societies, and similar centres, but would never dream of attending lectures and classes, however attractive, within the University or College buildings. Yet they covet the wealth and power of knowledge, thought and fellowship which the Universities have treasured through many generations. Here is the way by which the University may go out of itself to come into the lives of the people.

Of all these points abundant illustration drawn from the practical experience accumulated since the Armistice could be given if time permitted. But the one thought upon which I could dwell is that, largely as a result of the War-time experience, a new world is open to the Universities. It can be explored only by those whose passion is a commonwealth of humanity.

BASIL A. YEAXLEE.

Discussion.

A. MANSBRIDGE, M.A. (World Association for Adult Education): First I must thank you for your extreme kindness to me in this matter. It is perhaps because I can say something about the spread of the work of University Tutorial Classes in the British Dominions that I am justified in speaking this morning.

It seems to me that the real and true spirit of adult education is over this Congress. The tide of it is rising so high that it will wash the snags out of the hearts of all of us. Adult education is indeed coming into its own as an organized thing. Royal Commission after Royal Commission—over two of which you have presided, my lord—in Great Britain and in Australia, have reported quite definitely in clear terms that adult education is the function of Universities for their own sakes internally as well as for the sake of the great world outside them. There is, and can be no doubt about the truth of their conclusions. The real, and true, and great opportunity is coming to the Universities of the Empire. Sir Michael Sadler said in his inspiring paper that he sees no signs of a great revival, but I believe the signs are hard upon us. If the Universities do their part under the influence of that beautiful, and wonderful, and pure spirit, of which he spoke, then we shall have a revival—a great religious revival, if you will —in the best sense of the word, a re-creation of spiritual life which we need in our time and generation. There is no shadow of a doubt about it.

Now I said that adult education is coming into its own. I think we can claim that the Universities have decided thoroughly the method of extra-mural organization which is expressed by the idea of the Joint Committee. On such a committee the representatives of the world outside the University—representatives of the world of labour—sit side by side with members of the University, and thrash out the difficult problems which arise, and make it certain that the legitimate points of view held by working men and women students are not overlooked. As they sit upon these committees they are in very fact members of the University itself, and they deal with matters with a consciousness of responsibility to the University as well as to their fellows in the workshop, the factory, or the mine. The Joint Committee deals with the local committees, encouraging in them the exercise of freedom in all possible matters, which was splendidly advocated by the Vice-Master of Trinity in his paper. You will remember, some of you, that nine years ago at the first Congress of Universities, we talked about this matter of University Tutorial Classes

with a sense of triumph and of full hope, but then the movement was only small; there were eighty classes in being. During the Session 1919—20 there were 229 classes in England alone. Mainly as a result of that talk, the idea of the University Tutorial Class has flooded out over the British Empire, has found expression in the United States, and profoundly affected adult education in continental countries. Prof. Darnley Naylor has told us about the classes in South Australia; he would like me to say something about Australia in general. In New South Wales there are 51 Tutorial Classes with 1,600 enrolled students, of whom 1,300 are classified as "effective," that is, they have fulfilled their pledges. Thus a much larger proportion of the population of New South Wales is in tutorial classes than in London itself. London has only 31 classes. The population of London is much in excess of the total population of the whole of Australia. New South Wales shows London how to do it. Indeed it shows England how to do it. Both State and University exceed, if I may say so, in the generosity of their financial assistance, the help we get here. Of the 51 classes in New South Wales, 17 were in Economics—which is the blessed subject—10 in History, 9 in Social Problems, 5 in Literature, 2 each in Sociology and Child Study, and the rest in Logic, Music and Biology. Dr. Darnley Naylor spoke about the ages of the men, remarking that the younger men were not touched. That is our experience in England. Roughly speaking we do not overlap with the University age. We get students, as a rule, from twenty-five years of age to eighty. Returning to Australia, I remember that in Queensland the first keen student to sign on was a glorious old lady of seventy-three, and she stuck to it until she died. So far as occupations were concerned, because the question of the proportion of working men and women was referred to, I find that in New South Wales there were 180 miners, 180 railway employees and 57 general labourers. That is a very fair proportion of working men. Four of the students are Members of Parliament, and we are living in hopes of an equivalent here at home. There have been attempts to ensure that no man shall be elected to Parliament in the various parts of Australia unless he has attended a University Tutorial Class, or its equivalent. An audience of that sort would be interesting to watch both in its action, and in its effect in England.

Now I must speak quite briefly concerning other parts of Australia and the Empire. In Tasmania the adoption of extra-mural work has re-interpreted the University to the inhabitants of the island State. There are three whole-time tutorial class lecturers at

work ; almost my last official act was to select for the University a qualified tutor for work on the Western Coast, where the rains are long and heavy. In Queensland there are classes at Brisbane, Maryborough and Mackay. In Brisbane alone there are 260 students this session. In South Africa the work has taken firm root in Natal, where there are two tutors. In Canada there are signs that University Tutorial Classes will spread out from Toronto and Montreal to the rest of the Dominion.

After this brief survey I must turn to the question of sect and party. Winged words have been spoken on this subject this morning. There isn't much more for me to say. The whole matter has been lifted above sect, and party, and class, and expressed in the eternal terms of humanity. Of course, as in South Australia, the leaders of tutorial classes get many kicks, as elsewhere, but fortunately they are only from intolerant or unthinking extremists on either side. The kicks balance one another. After all men with a mission always get kicks—if you don't believe that, get a mission and see ! Labour does not want partisan education. There are sections of Labour which want partisan education, and they are vigorous. There are sections of Capital which want partisan education, but on the whole, the intense desire of working men and women is for firmly and truly based democratic education from which nothing is excluded. There are people who are keen about education because they think it will allay industrial unrest. It will do nothing of the sort. It will make finer men and women to deal with the industrial crises as they arise. The whole conception of University education is the direct result of the desire for the improvement and development of the body, mind and spirit of man.

Now concerning the range of subjects. The excess of economic study has been deplored. I believe that the effect of these classes joined to the effect of the kind of work which Sir Michael Sadler spoke about will be to extend the range of subjects. It is noticeable that many students who commence with Economics, after a time develop keen interest in Literature, Philosophy, and not infrequently in Science. I do not believe that working men and women naturally want to study Economics to the extent that they do, but they feel it their duty to do so, and they fulfil that duty nobly. I am glad beyond measure that they are studying Economics. Economic knowledge shot through with spiritual purpose will do a great deal for the life of the future, but my point is that its pursuit in University Tutorial Classes will result in Literature and Music, and all the other subjects taking their

right place in the whole business of popular education. I do believe that the future is bright with promise.

I most profoundly believe that the Universities are supreme among the central organizations which are left to work freely in this next period of the world's history. They have reposed in them the confidence of the best men and women of all kinds of experience. I believe that if they will work in that spirit of self-sacrifice spoken of by Sir Michael Sadler, which after all is the root of all progress, and in that spirit of adventure spoken of by Mr. Yeaxlee, some of us will see things far beyond that which we ever expected to in our lives. Let us get rid of the obsessions which come from undue contemplation, and therefore a misreading of past experiences. Let us go right straight ahead, constructing a real democracy in education, which will welcome every sort of man and woman to help make up the whole for the good of the whole, no matter who or what their fathers are ; no matter what they are if they have goodwill ; no matter whether they were in prison yesterday, if they are repentant to-day ; the best of all classes, experiences and beliefs, marching on to the Jerusalem of our desire.

Sir Robert Stout, LL.D. (New Zealand) : A great deal has been said to-day about what the ideal of University education should be if it is to be extended and made open to all classes of the community. May I point out to you what our ideal was in New Zealand fifty years ago ? We thought it the duty of the State to teach all the children, that our primary schools should be free and that education should be secular, so that all creeds could meet in the same school with the same teachers, and be associated together without any separation between them. We also thought that the secondary schools should be free just as the primary schools should be free, and that the University should be free also, so that a bright boy, if he could pass the examination, which would pass him into the secondary school, should have free education there ; and from the secondary school, if he could pass the necessary examination, he could go into the University ; his whole education being free. We believed that that was the true democratic system of education, that the education should be provided by the State, so that every child could be fitted for life with the highest education he was capable of utilizing. If that idea had been carried out, it would be unnecessary to deal with what is sought for so much now, namely, adult education. May I tell you that we have now about 3,000 students in our University, and if you had a corresponding proportion in England, Scotland

and Ireland, you would, I suppose, have about 120,000 students in your Universities. Of our students I believe that about two-thirds are earning their living. We have to have our classes in the evening—our ordinary University classes in the evening—in order that these students may be able to earn their living during the day, and go to the Universities at night. This has met with much opposition from some of the professors, but we made that rule, and we have been able to carry it out, so that there are in our Universities and Colleges now a great number of students who are earning their bread during the day, and attending the classes in the evening. I believe that if you adopted the same scheme you would solve the problems of adult education. We know that every one is not fit to utilize the highest education. If University education were free, all would not be able to make any use of it, or obtain any benefit from it, but to those who could use it or benefit from it, an opportunity would be given. We have now about 80 per cent. at least of our children attending our secondary schools, both boys and girls, whose education is free, and I believe the time will come—when we get more money—when our University will be free also, and when the only question to be put to the student will be, not whether he has money to pay fees, but whether he can appreciate and make use of the education that is open to him.

I thought it necessary to point out to you what our ideal of State education means, and we believe that with that and with free libraries, which we have also established, the time will come when no class in our community will say that education of the best and highest quality is not open to them.

PROFESSOR W. CALDWELL, D.Sc. (McGill): There have been many important things said to-day at this meeting. To economize the few minutes that are open to me, may I say that I would like to start from the expression you, my lord, used yourself. You talked of an unfortunate class division in knowledge. I think that that is the most serious difficulty that has confronted the Universities in the past, and still is confronting them to-day. I had a talk with Mr. Mansbridge a week ago, and my mind is still full of this subject. I have a feeling after all, Sir, that in spite of the W.E.A. work, University Extension Work, and so on, we have but scratched the surface of the industrial and social discontent of this country and of other countries, and our comparative want of success is due in part to the fact that English University men somehow cannot succeed in throwing off all aloofness, all academic superiority. Until we can give working

men the impression, not that we are asking them to step out of their class into the University, but that University men are one with them, and that as University men it is our business to interpret to them the common life, to prove to them in practice and in theory that education is really the interpretation of and adaptation to the environment. Until we can show them that education is the continual " re-creation " of the environment, we shall not succeed in our University work with the public. Sometimes in Canada we get—and are honoured by getting—men from this side, from Oxford and other places. But they are apt sometimes to give the impression that they feel themselves to be superior to their new surroundings. They give this impression, I say, and live " apart " from the common life. Occasionally we get a man in Canada, like the Prince of Wales, and some of the best of our Governor-Generals, who can go into the mining camps or the factories, and interpret to the people the meaning of the life they are living. But when you interpret to a man or woman the proper meaning of the life that he (or she) is living at the moment, you take them into the atmosphere of what is called the University. You make that man or woman free. We must interpret freedom to the people, the freedom that we all may have even in hard, unremitting toil.

PROFESSOR J. N. DAS GUPTA, B.A. (Calcutta): It is rather late in the day, to emphasize the importance or to trace the history of the University Extension movement. Moreover, on the present occasion there is no need for it, as it has been so admirably done in your lordship's eloquent introductory remarks. I stand before the Congress just for one short moment to speak not so much about the importance of extra-mural work, or to dwell on the advance which has been already made in the work.

My object to-day rather is to tell this distinguished gathering of my fellow workers, drawn from all parts of the Empire, of the problems which are with us in India to-day. To illustrate. The British Parliament quite recently has given us a new Government of India Act and a new Constitution. For the right working of that Constitution it seems to me essential that those who have the franchise, who enjoy the right of voting, should have a clear comprehension of the real needs of the country; some knowledge of the history of our institutions, not merely political, but also social; some idea of the growth of our administrative system. Thus we have to reach the voters; we have, so to speak, to educate our rulers in India; to send out to them trained messengers

of culture; and this question at the present moment to my mind is thus not merely just a theoretical question; to my mind it is a question of intense public interest—all the more pressing because we in Bengal, at any rate, cannot hope to introduce immediately any satisfactory system of imparting instruction in Civics in our elementary, primary and secondary schools.

To pass from the mass of our population, the agricultural labourers in our villages, the industrial workers in our towns, to the large body of graduates who yearly pass out of our Universities. In Bengal, as elsewhere, most of these after graduation enter into business or take up some profession, either of law or of medicine. They have little time and few opportunities of keeping themselves in touch with the course of events in countries outside India. I venture to think, my lord, that the Universities have a distinct duty towards these sections of the community, and I am glad to be able to add that our University fully realizes this and has been striving to do what can be done with its limited resources to grapple with the difficulties of the situation. But our difficulties in India are immeasurably greater than yours. When I speak of our difficulties, I am thinking not merely of the immensity of numbers that we have to deal with—and in this connexion I beg to be excused for making a passing reference to the fact that over 15,000 candidates appeared at the last Matriculation examination of our University in March. We have difficulties in other matters also. We lack men as well as money, though I am convinced that able and willing workers will never be wanting in Bengal for any good work. Some of us who visited Bristol the other day, were deeply impressed by the splendid benefactions which the Bristol University has received from generous donors in its neighbourhood. Such benefactions we can never hope to receive in Bengal, although I rejoice to be able to say that two of our patriotic citizens have set a brilliant example to the whole of India, and have given us endowments which have enabled our Vice-Chancellor to start and organize a Science College in Calcutta. In recent years we have organized courses of Extension lectures covering a fairly wide field of study: Literature, History, Politics, Economics, Psychology, Astronomy, are all included. These lectures are open to the public and not confined to the members and graduates of the University. These lectures are delivered in the afternoons, so that it is possible for busy ministerial officers and hard-worked professional men to attend them after the day's work. As Sir William Beveridge explained yesterday in reference to the work now being done in the London School of Economics, these lectures are not delivered by a separate set of teachers, but by those who

are doing the highest possible teaching work in our University. I must confess that a great deal more remains to be done. Our difficulties in this connexion are mainly financial. If the deliberations of the Congress this morning give us guidance in this matter, and help us to strengthen our position generally, we shall have ample cause to remember with gratitude the Congress of Universities of the Empire of 1921.

H. MARSHALL TORY, D.Sc. (Alberta): Dr. Hill suggested to me that I might say a few words about the Extension work being carried on in Canada. As I am, of course, more intimately acquainted with the work which is done in our own Province, perhaps I might tell you something about that for a few moments, and from that you can infer what is being done in the rest of Canada.

From the start of the University of Alberta we organised a Department of Extension, not exactly the old type of Extension, but following more nearly the method adopted by the great Western Universities of the United States. As our University is organized to-day, this department is one of the large departments of the University, with a definite programme which it is seeking to carry out for the purpose of reaching the scattered population of the Province, and especially the adult population. Three men devote their time to providing instruction by way of lectures which they give to clubs and various social organizations, to Community Leagues, and to such institutions as our Boards of Trade. Wherever there is found a group of people anxious for instruction we seek to give them the necessary help in securing what they require. Our organizers are at work throughout the Province, promoting the formation of Community Leagues and getting them to think in the terms of some subject suitable for study and discussion. In addition, we carry on our work in connexion with the Farmers' Societies, not giving technical instruction so much as instruction of a more general character. Our Farmers' Clubs would much rather have a lecture on prehistoric animals than on animals they are feeding from day to day, and we are trying to meet this demand, and to provide them with literature for reading at home. We have about 300 circulating libraries. Wherever there is a club or an organization of people who desire to read, a library, consisting of from sixty to eighty books, made up to meet the demand of the locality, is put in circulation. We have also a little scheme of our own in order to give the public some clear understanding of the questions that are from time to time before the public, a system of what we call

Packet Libraries. Little packets of literature dealing with a specific subject are made up, giving the materials for discussion and debate, on both sides, on any topic that is of immediate interest. Recently, for example, we had the very thorny question of Woman's Suffrage before us. We distributed throughout the Province a Packet Library, giving the best material dealing with this subject that we could find in the current literature of the day. When the great issue of Prohibition was before the public in Canada we supplied a good deal of the literature on both sides of that subject. Even members of the Legislature have come to us to get the material on which they could conduct a solid discussion on matters before the House. We are seeking to forestall for the future the necessity for much of the work we are doing now by entering into the schools. All the great questions that come before the Province are discussed in our schools before an audience of the general public secured by the co-operation of Debating Societies within the public schools and high schools of the Province, wherever there are sufficient people to make that possible, and we end up with a debate on the subject at the University itself by the winners of a whole series of debates. Recently we discussed the whole question of the naval policy of Canada, sending out these little Packet Libraries containing the best material we could get, and finally the question was debated at the University when many of the members of our Legislature attended the debate to hear what these young people had to say. Our object in all this is to set people thinking in an intelligent way about the subject that is before the country at the moment; to see that debates and discussions are based upon material which it is worth while for people to talk about and listen to.

We are also organizing group studies wherever people can be got together. Every packet of ours carries with it outlines of courses of study with carefully selected lists of books. We also have our Open Shelf Library. Of this we publish a catalogue of some six to seven thousand titles. This is sent out to any individual who asks for it, and he is informed that he can have a selection of the books for a certain period by paying transportation charges both ways. There has been a tremendous call for books of a much higher class than those to be found in circulating libraries, by professional men, clergymen, teachers, and persons interested in various economic subjects. A constant stream of this literature goes out from our University office.

This, in a general way, will give you some idea of our activity, and will, I hope, enable you to appreciate the services which

the University is rendering to the public. I had an illustration of its usefulness to the University not long ago. Our Annual Estimates were before the Legislature, and the question arose as to whether it was not necessary to trim them a little. So I said: "Pick out the thing you would like cut down or cut out," and, incidentally, I pointed to our Budget of between six and seven thousand dollars for our Extension work, and said: "Shall we strike this out?" The President answered: "I don't think you need to touch that. In a far-off corner of my constituency I found a man who had one of your libraries down there. It seems to me a pretty good bit of propaganda for the University, and I think you had better leave that item alone."

This work is being done practically in all the Universities of Canada. Toronto has begun a new movement this year by organizing community studies on a higher basis than the rest of us, and, broadly, the Universities are reaching out all over Canada on the lines I have indicated in these remarks.

G. S. Veitch, Litt.D. (Liverpool): My lord, you spoke, in your introductory remarks, of the tide that is rolling in upon us. May I say that those of us in the Universities most in contact with the industrial areas, who are most sensitive to the in-rolling tide, are not afraid of it? There are one or two points that have been spoken of about which I would like to add a word or two. In the first place, may I say that dealing with extra-mural work is not a problem by itself? it is inseparably associated with the staffing of the Universities. All the newer Universities, at any rate, are very seriously understaffed, and you cannot deal with the problem of extra-mural work satisfactorily unless you also augment the staffs, particularly of those departments in which there is great demand for extra-mural work. What I am afraid of, and what many of my colleagues are afraid of, is that we might develop a sort of special professional class for the extra-mural work and would have a type of intellectual bagman. We must have true University teachers. That this brings us to the ever-present question of money I do not deny, but I think it right to emphasize it. People have spoken of the character and extent of the instruction given. When we started upon this kind of work, particularly upon the Tutorial Classes, we were both too optimistic and not optimistic enough. We were too optimistic because, through our want of foresight, we thought that the average work turned out by Tutorial Class students would be equal to that of a few of the pioneers; and we have been disappointed. It is our

own fault. But, on the other hand, we have been very much encouraged because the area of the curriculum, so to speak, has very much increased as time has gone on, and has become much more humanistic in its character. We have forced the door with Economics and Industrial History, but once inside, we have carried on with English Literature and Greek Literature, Psychology and Music. The development of Psychology has been extraordinary in recent times, and last year in the Liverpool area we had more students in Tutorial Classes for English Literature than we had for Industrial History and Economics together. This year, I understand from my friends at Manchester, that at Manchester English Literature out-tops the Economic and Industrial History Classes. That is a very good thing, and it has a relation to the question of maintaining the real University teaching, because the more we can spread this kind of demand, the more we can distribute the work over the less over-burdened departments and, within the limits of our small staffs, give the very best type of instruction all round. I hope that we will not, in speaking of Tutorial Classes—for which I am an enthusiast—I hope we will not forget the older type of University Extension work, for a very good reason. The two things in a sense are inseparable. In even a small town like Crewe you will never, within measurable distance, reach the whole community through Tutorial Classes; you must have courses of lectures which will appeal to a wider audience and which will break up and fertilize the ground. The Tutorial Classes themselves will lose nothing whatever, but rather will gain by the development and the increase of the ordinary University Extension work, which I believe is capable of an elasticity which has not even yet been realized.

THE REV. D. H. S. CRANAGE, LITT.D. (Cambridge): Mr. Mansbridge has reminded you that when we met for the Conference in 1912, we were very hopeful about adult education and extra-mural work, but I do not think the boldest prophet would have ventured to think that in the next nine years, with half of it taken up with the Great War, there would be the enormous increase of interest and enthusiasm we now see. That is surely very encouraging. We have recently had the foundation of the World Association for Adult Education, and the British Institute of Adult Education—both due to the fertile brain of Mr. Mansbridge. It is extremely encouraging that he can successfully do this and get large numbers of representative men to join in the work. At present, as you know, there are two main forms of extra-mural work—the old Local Lectures, as we call them at Cambridge, and

the Tutorial Classes; and these two things are complementary. First of all, the Tutorial Classes are extremely expensive—not necessarily bad on that account, of course—for some of the classes have cost £5 per student per annum, and such expenditure is thoroughly justified if the results obtained are of a first-class nature; and secondly, they must touch a small minority. Take, for instance, the county of Durham. Last year there were, as we have been told, some fifty Tutorial Classes, but at the same time in other centres there were large University Extension Classes. These are getting hold of audiences from one to seven or even eight or nine hundred people, and are doing a wonderful work in reaching the large numbers whom, of course, Tutorial Classes cannot possibly touch. The two movements have this in common, that they both have their lecture, their class, and their paper work, and those who don't know this fact will be interested to hear that that system has now been adopted for some of our work within the University of Cambridge. Prof. James Stuart founded the movement forty-eight years ago, and the University has now instituted a number of classes on the University Extension model which many of our students will be going through. We have carried on up to now with great difficulties and very little patronage from the State or from the Local Authorities. Now we seem to have turned the corner and we are having the blessing, publicly expressed, of the President of the Board of Education, and increasing help from the Local Education Authorities. We may look forward with great hope to the future, but, notwithstanding the great help we are having from outside and governing bodies, we must not lose the old individual enthusiasm which has been the real secret of the success of extra-mural work in the past.

THE REV. T. C. FITZPATRICK, D.D. (Cambridge): I wanted to have the opportunity, not of putting forward my views, but of stating one or two facts; but I do not think that I should have given in my name had I known that I was to be preceded by Dr. Cranage, our very able Secretary at Cambridge. I have the privilege of being the Chairman of the Committee which deals with the work of the University Extension Syndicate. I am not thinking of suggesting that any University should follow Cambridge. Probably, in some cases they have preceded us; but I thought it desirable to let you know what developments there are in connexion with the work which is the subject of discussion this morning. The Senate approved a report proposing the establishment of an entirely separate body to deal with University Extension

and extra-mural work. University Extension work at Cambridge has hitherto been associated with our local examinations; but this association is to come to an end as soon as the financial situation allows the University to take the action recommended in the report. This will be a great step forward. Dr. Cranage mentioned one great encouragement, financially, we have recently received. The scheme of University Extension was established by Professor James Stuart. Mrs. Stuart, who was a most regular attendant at our summer meetings and who died last year, has left a sum of money for the establishment of definite lectureships for University Extension. I hope that these lectureships will be University lectureships, giving the holders a definite position in the University. Dr. Cranage has already stated that for the new courses for the ordinary Degree of the University we are establishing lectures or instruction on the lines of University Extension. Finally, I wanted to say a word about our Joint Committee. Mr. Mansbridge, whom we rejoice to have as one of the members of our Joint Committee at Cambridge, will bear me out when I speak of the most happy relationships which have been established between the University members of the Committee and those who come from outside to give us help and advice.

I was asked to have a meeting at my house of those who came as the first representatives of the Tutorial Classes on the night that they arrived in Cambridge in order that they might become acquainted with one another. Two of them, I was told, were Socialists of the most extreme type. That did not affect me so long as they were prepared to leave my house as they found it, and during the course of the evening I had an opportunity of taking them over the house in which I am privileged to live, which is, undoubtedly, one of the most interesting in England. At the close they said, "Do you know we are extreme Socialists?" I said: "I was told there were two Socialists among my guests, but I did not know that you were the two." They replied: "You have taught us something we have never understood before. We have had people coming down into the places where we live and asking us to listen to an appeal from the past and from the wonderful homes and buildings that are in existence in our country. We have not seem them. Our neighbours live in a house exactly like our own; but what you have shown us to-night of the surroundings in which you are so fortunate as to live has entirely removed our indifference. We realize that there is something from the past that can appeal to us, and that when the appeal is made there will be a response." I believe that there is some-

thing valuable in men of this kind coming to the University, being welcomed in the University, and going out from the University as missionaries inspired with something of the spirit that these places ought to give to all who are privileged to work and learn in them.

WEDNESDAY, JULY 6.—Afternoon Session.

CHAIRMAN.

THE MOST HON. THE MARQUESS OF CREWE, K.G., M.A., D.C.L., LL.D., CHANCELLOR OF THE UNIVERSITY OF SHEFFIELD, CHAIRMAN OF THE GOVERNING BODY OF THE IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.

"The Universities and Technological Education."

Fourth Session.

The Chairman: Technology is defined in the great Dictionary named after this great University as "the scientific study of the practical or industrial arts." The term, I fancy, came into use some forty years ago, in connexion with the Department of Applied Science and Technology. Ten or fifteen years earlier Prof. Thorold Rogers had described "technical education" as being "the acquisition of scientific method and a knowledge of the principles and practice of the applied sciences." It would be convenient to draw a distinction; and just as a scripture lesson in a school is not regarded as an exercise in theology (though in strictness it might be), so in speaking of "technology," we might confine ourselves to the higher developments of those studies which lead men and women on to employment in the fields of industry and commerce, or engage them in continued scientific research. "Technical education" in Schools and Colleges of various grades would then have a clearly understood meaning of its own.

The Universities, old and new, exist because they satisfy the needs of the country, moral, intellectual, and practical; and the nature of the teaching they supply is conditioned by those needs. When, therefore, the conductors of an increasing number of industries assert that their methods and processes depend for development and practical success upon scientific knowledge, and that it is only from the appropriate departments of different Universities that such knowledge is forthcoming at its best, the Universities have no choice. They must ascertain what their possibilities are, or they must admit failure to open, for the coming generation, the gate of entrance to a vast arena of the national life. Very few will now be found to argue that such demands are unfairly made of a University. Nobody now thinks of a University merely as a place of polite learning. But the extent to which the claim should be met, and the manner of meeting it, are still subjects of controversy, and it is these which have to be examined to-day. We are certainly not engaged in the notorious case of "*Science* v. *The Humanities*," a case as famous, and as fictitious, as that of "*Bardell* v. *Pickwick*." It has become what the French call an "old song"; and though nobody will dispute that for generations science was sadly neglected in the formal curricula of Schools and Universities, it was largely because, before the industrial expansion of the nineteenth century, a good knowledge of Latin gave a poor man a better chance of succeeding in life

than, for instance, an equivalent mastery of physics, and the tradition was maintained for years after the practical positions were reversed. But, as we know, the studies have often gone hand in hand. I have been reminded, in the course of a recent inquiry, unrelated to technology, that John Wallis, the famous Savilian Professor of Mathematics here in the seventeeth century, was eminent also in Latin, Greek, and Hebrew; while Bentley fitted up a laboratory at Trinity for the Cambridge Professor of Chemistry. I recall, too, that Pierre Marcellin Berthelot, the great French exponent of Chemical Synthesis in the nineteenth century, was First Prizeman in History and Philosophy at College, and a life-long devotee of Greek.

No, the dispute, so far as it is a dispute, is now argued in another court, and on issues which I approach with much diffidence, for I cannot discuss them with inside knowledge, except in so far as I am helped by official connexion with two leading institutions where Science is at home—the University of Sheffield and the Imperial College at South Kensington. First, then, Science by common consent being a main subject at all the Universities, old and new, throughout the United Kingdom—how far is it wise, having regard to the right conception of a University, for them to proceed in the direction of actual technical training and preparation for an industrial career? Or should Universities rather confine themselves to teaching the laws and principles which are the foundation of practice, leaving the special applications to the time when the student begins his or her industrial life? Further, if Universities undertake practical training for Industry, is there any fear of their neglecting other duties which none can perform but they, such as the equipping of students whose gifts point notably in the direction of research, and the training of teachers in highly specialized branches of scientific knowledge? It is one purpose of this meeting to satisfy these doubts if possible, and as a preliminary one may ask what degree of uniformity is demanded from our British Universities? Must they advance on a uniform track, or are wide limits of deviation open to them? I should myself plead that they be as wide as possible, and that each University be encouraged to make its own soul, so to speak, and to develop on the lines dictated by its history and its surroundings, granting as free a choice as can be to its students and teachers, refusing to distinguish fallaciously between remunerative and useless lines of work, and guarding against the intellectual vulgarity that sets the scholar in a different class from the worker, either for laudation or contempt. History and surroundings, indeed, must be allowed to exercise their fair influence. Oxford and

Cambridge, St. Andrews, Edinburgh and Aberdeen, and Trinity, Dublin, cannot be too scientific, but they might suffer from an excess of technology. Each University must grasp its local advantages. For instance, the application of science in some of its latest developments to the industry of agriculture has of late been fully apprehended. And both here and at Cambridge the utmost use is being made of facilities surpassing those open to any other English University—though I conceive that the University of Bristol might well become another great centre for agricultural training. Such vast ports as Glasgow and Liverpool must attract to those Universities many whose minds are set on certain branches of engineering; Sheffield has been inspired by some of its local industries to concentrate on the metallurgy of steel and iron, and upon the technology of glass; Leeds is supreme in some branches of chemical research and training, and Manchester offers especial facilities for others, and for some lines of engineering; Birmingham too, has its special and characteristic work to fulfil; lastly, if I may be excused for crying my own wares, the Imperial College, offers, at the School of Mines, and in some branches of Economic Biology, chances which the student can scarcely hope to find elsewhere. So far as an outsider may presume to have an opinion, the distinction between pure and applied science should be insisted on at the University as lightly as possible, and the treatment of the student with regard to it should be empirical, depending upon his powers of assimilation as his education proceeds, the diet being varied accordingly.

I have but one more matter to touch on. It may be questioned how far a University should justify its name, and be as universal as possible, or whether modern demands can best be met by separate Universities devoted to technology. This is too large a subject to discuss at length, but there are familiar instances of the latter system in the Technological College at Charlottenburg, and the Massachusetts Institute of Technology close to Boston, both independent and degree-granting institutions. The relations of these with the Universities of Berlin and of Harvard respectively deserve close examination. My own view, for what it is worth, is that, generally speaking, the future will rest rather with Universities possessing a distinct bias, whether literary or scientific, not exclusively devoted to either line of study, but frankly striving after special efficiency in the one field or the other. Oxford and Cambridge, whose points of resemblance and of divergence form a most fascinating study, will continue to take good care of themselves; and the problem of London, both as the pivot of the

Empire and as the centre of a population of 10,000,000, stands by itself and has yet to be solved.

I leave the detailed question of technological studies and practice in Universities to the readers of the papers on whom it is my privilege to call in turn.

THE UNIVERSITIES AND TECHNOLOGICAL EDUCATION.

First Paper.

In an excellent address delivered a few years ago at the Carnegie Institute of Pittsburg, Pennsylvania, Lord Bryce remarked that if we look back over all the centuries, we shall not find so much knowledge acquired with regard to the constitution of matter and the forces working within Nature as we owe to the last 150 years; and if we think of the application of this knowledge to the work of life, of what has been done for productive industry, and for transportation by land and water, of the means which we now possess for the transference of thought irrespective of distance, and of the prodigious stimulus to population as well as to wealth which the knowledge of natural forces has produced, we shall think of the most extraordinary phenomena of the last two centuries. The great advance of knowledge in modern times has been in the domain of science. "Look in all other fields," again to quote Lord Bryce, "and you will find no field in which, during this century and a half back, so great a crop and precious a crop has been reaped as in the field of natural science."

The times have changed, and our educational system must change with them if it is to serve the new environment; the deeper waters of ancient knowledge and experience must still flow on as heretofore, but they must be swelled by the streams of new learning which have changed the face of the world in these times in which we live. The question which is before us now is how this new learning, and especially the study of its practical application, may find its true and proper place in our Universities.

It is generally conceded that adequate provision must be made, not only for the teaching of these sciences, but also for training men in the methods of conducting scientific research, of interrogating Nature, of adding new knowledge to our present store, thus broadening out the field for further advances into the unknown and looking to a more complete mastery of the forces of Nature which may bring about for mankind results not yet dreamed of. This field of research in pure science is apparently illimitable, and the unravelling of the secrets of the material universe, in the faith and hope that we may finally reach a complete understanding of the intricate and wonderful pattern of that "living garment of Deity," is, beyond all doubt, not only a task of entranc-

ing interest, but one of the very highest which can engage the mind of man. It must be one of the chief activities in the life of every great University in these newer times.

But in addition to this cultivation of pure science, or "science for its own sake," the University must consider what part it should take in applying the discoveries of science to the improvement of man's estate. We are likely to forget how far the conditions of human life have been advanced through the discoveries of science in these later days. It is only within the past few decades that a man when he desired to go himself, or to transport anything from one point to another, could adopt any other method than that used by Pharaoh when he pursued the children of Israel out of Egypt—by employing a chariot or waggon drawn by horses. It is only within the past few years that one man, when he wished to communicate with another at a distance, could do so in any other way than the way in which Abraham communicated with Isaac—by sending a messenger. It is only within the past few years that a man when he wished to light a dark place could employ any better means than that adopted by Noah when he wished to milk his cow on the Ark after sundown—a candle. If the immense sources of power made available for the use of mankind through modern discoveries have not lightened human labour as much as they should have done, this merely indicates that our economic system is not making efficient use of the assets which are now available, and possibly that our mental and moral attitude requires readjustment to present opportunities and abilities.

The problem facing the Universities of the present time is how far they should proceed in the development of the field of practical and applied science. Technology is the application of the discoveries of science to the needs of man, and the exact position which technological studies should occupy in the University curriculum is as yet uncertain. Shall the University incorporate in its organization a complete series of departments of technological instruction to meet the needs of the growing industrial development of the world, or shall it hold itself aloof from these, or if not, what middle path shall it select? The consideration of this question falls under two heads: First, Shall the University train men to work in the field of industrial or applied science? Second, Shall the University engage in technological investigation and research?

The training of men for higher professional work in the various branches of engineering and other applied sciences is in all English-speaking countries now recognized as falling within the legitimate

province of University effort, and in many of the Universities of the Empire large, flourishing and renowned schools or Faculties of Applied Science have been developed as integral parts of the University system. In these the aim is to give the student such a thorough grounding in science and in the underlying principles of his profession that when he takes up its active practice, though commencing on the lower rungs of the ladder, he will have a prospect, by virtue of his superior education, of climbing in due course to a position in which he will lead and direct.

To meet modern conditions these University courses should embrace not only work which is usually required in the study of these professions, but they should include instruction in the field of economics, especially in those branches of this subject which deal with the relations of labour and capital, with the all-important questions of Bonds, Stocks, Debentures, Balance-sheets, and with the financing of great industrial enterprises. A knowledge of the elements of law, as bearing on these, is also of importance.

But over and above this training which he receives at the University, even if it includes, as it should, continuous practical instruction in the laboratories and workshops, the student must extend his sphere of knowledge by gaining practical experience in the operation of the industries with which he will be eventually connected. He must himself work in factories, industrial plants or machine shops where operations are conducted under commercial conditions and for profit. Here he also adds a further and most important element to his education, namely, a first-hand acquaintance with the conditions of labour and with the great problem of the proper handling of his brother-man.

Another condition of success in training a man for a successful career in applied science, especially in the more formative conditions of a new country, is that the education he receives shall give him adaptability to the varying conditions, the changes and chances of this transitory life, which manifest themselves in a more pronounced manner in the technical professions than they do in any other walks of life. This will enable him to take up lines of work which are not exactly those upon which he had expected to enter, and also to adapt himself to the changing environment of modern industry. To this end, his training, while thorough, must have a wide foundation of general professional knowledge as a basis for the more advanced instruction in his special line.

This aim, it is believed, has at McGill University been achieved by arranging a course of study extending over four years, entrance to which is gained by a high matriculation examination, requiring,

among other things, a good knowledge of rather advanced mathematics. The first two years of the course are identical for all branches of engineering, and are devoted to the teaching of those subjects which lie at the basis of all engineering knowledge—higher mathematics, mechanics, chemistry, physics, surveying, descriptive geometry, mechanical and freehand drawing, with the shopwork, laboratory and field exercises which belong to these subjects. Further studies in the English language also form part of the work of the first year.

At the close of the second year the successful student must select one of six branches of engineering in which instruction is given—Chemical Engineering, Civil Engineering and Surveying, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering, or Mining Engineering. In the third year the students in all these courses are given a good training in the elements of Mechanical and Electrical Engineering, since these enter into almost every line of engineering practice. With these, however, instruction is given in those subjects which belong more particularly to that branch of engineering which he has specially selected, while in his fourth year his whole time is devoted to advanced studies in this line.

The work of the regular session goes on continually from October 1st to May 12th, with the exception of two weeks at Christmas. This leaves nearly five months between the academic sessions in which the student finds employment in some industry or engineering work. He is also required during the summer to carry on a specified course of reading or to prepare a report, preferably one describing the work on which he has been engaged.

Upon the conclusion of the course, therefore, the student has had four academic sessions of formal instruction with the accompanying laboratory, drawing-room exercises and shopwork, alternating with three summers of practical experience in some branch or branches of the work of his future profession. In this way principle and practice are combined, and throughout the academic atmosphere there is transfused something of the activities of the great outer world.

With the very rapid advance of science, however, and the ever growing application of the more recondite branches of science to the development of industry, the necessity of providing some men with a higher training and a more complete equipment for scientific work is becoming daily more manifest. These are the men who are to undertake investigation and the application of new knowledge to the problems of industry, or who are in some cases to become teachers for the training of men in this field. For

these additional advanced courses of study must be provided, at least in our larger Universities, leading to the degrees of Master of Science and Doctor of Science or Doctor of Philosophy. In the courses leading to these higher degrees the student must be taught how to conduct researches. This can best be done by requiring him actually to carry out some piece of investigation under the direct guidance of a teacher of experience. The training in research should, however, be combined on the student's part with the acquisition of a deeper and more extended knowledge of those branches of science to which he is more especially devoting his attention.

This higher training of men, more especially in the domain of Chemistry and Physics, is one of the special duties of Universities at the present time, when such a wonderful field is being opened up by these sciences, and when discoveries are being made daily the ultimate significance of which no man can as yet venture to predict. There has, furthermore, in recent years been an ever-increasing demand for the services of such men by great industrial corporations, many of whom now retain at high salaries large staffs of the most highly trained and most expert men obtainable, engaged in the study and investigation of any and all subjects which may have any bearing on the improvement and development of their processes and the extension of their enterprises.

In order to encourage students to go forward in these higher fields of scientific and industrial research, the Government of the Dominion of Canada, through their Honorary Advisory Council for Scientific and Industrial Research, provide each year forty-five bursaries, scholarships and fellowships for graduates of Canadian Universities who have shown special aptitude for such research work. This enables them to follow advanced or post-graduate courses of study and research in the Canadian Universities, thus ensuring that there shall gradually be developed in Canada a body of trained students and investigators which may be drawn upon by the industries of the Dominion, the Universities, and the great Government departments dealing with the national resources of the country, and may bring to them the highest services of modern science. The great advantages which accrued to Germany from the possession of such a body of trained men were made very evident to all the world in the phenomenal industrial progress of that country in the years preceding the outbreak of hostilities, as well as throughout the whole course of the Great War itself.

To sum up, then, it is certain that the University, in order to play its proper part in the economy of the modern State, should not only teach the Humanities, but should extend its field to cover

what may be termed the " Realities " ; that it should teach science in all its branches ; and that it should not be content to hand on only the knowledge which has come to us from the past, but that by the encouragement of research its laboratories and workshops should keep ever adding new knowledge to our present store. This research and these wider studies should not, furthermore, be confined to what is generally termed Pure Science, but should be extended to the application of science to the Arts and Industries, a field in which it can yield results of immense value to the community.

And this leads to the consideration of one further and final question, namely, the relation which the University should hold to Technology in the more restricted sense of the word, that is to say, to the actual work of the individual technical trades. Just what this relation should be will have to be determined by experience as time goes on. At present, however, it would seem that the University should not undertake to train men for the work of their respective trades. Such training should be provided—it is of the greatest value—but not by the University. Much of this training can best be given in the factory itself. To surround itself with a great group of elementary technical schools would make the organization and administration of the University elaborate and cumbersome without any corresponding gain. Possibly in special cases where the University is situated in a district which is the centre of some single industry, or group of closely allied industries, it may with advantage relate itself to a group of special trade schools.

It is in the higher planes of technological education that the University has its fitting place. In some of the regular courses in its Faculty of Applied Science, more especially in the final year, the University may with advantage, by means of optional courses, provide instruction in certain branches of Technology. Shorter courses of study might be made up from selected portions of the curriculum for men who desire to enter trades but are unable to follow the complete course provided in the curriculum. As an instance of the former arrangement, the provision made at McGill University for instruction in the technology of the paper industry may be cited. The Province of Quebec is the centre of this industry in the Dominion of Canada. The Government have accordingly located their Forest Products Laboratory, a research institute for the study of the problems which present themselves in connection with this great industry, at Montreal, adjacent to McGill University, which provides the building in which this institution is housed. Students in the regular course in Chemical Engineering

given in the Faculty of Applied Science are permitted in their fourth year to devote special attention to and receive special instruction in the chemistry of pulp and paper making. They are also admitted to the Forest Products Laboratory, where they can follow the various researches which are being carried on by the regular staff of that institution, and they thus become familiar with the problems which present themselves in connection with this industry and with the manner in which they are approached and solved. The officers of the Forest Products Laboratory also make use of the testing laboratory of the University, which does away with the necessity of duplicating much costly machinery.

It is, furthermore, a matter of opinion as to how far the University should go in undertaking extended programmes of industrial and technological research. At McGill University such research is always being carried on, and the University has at times undertaken investigations requiring the erection of special extensions to its buildings and the installation of a special plant. The conduct of these operations extends over a number of years. Such extended investigations are of advantage in many ways, not only to the industries on whose behalf they are carried out, but to the University as well. They, however, are a severe tax upon the staff of the departments which undertake them, and are likely, if continued too long, to distract the attention of those conducting them from the regular work of instruction and research, which is the first claim on the time and attention of the officers of the University.

It seems, therefore, that, as a general rule, technological research, whether it deals with the great problems of the industries or with the many smaller problems which daily present themselves in factory practice, should be carried out in separate Research Institutes especially built, equipped and staffed for such work, which is often of such a character that it demands the undivided attention of men of the highest training and ability. Such Research Institutes are, however, best located near a University in some large industrial centre, so that its officers may have the advantage of ready consultation with the University staff and the use of the libraries and museums of the University. The University would itself enjoy reciprocal advantages, but it would be free to follow uninterruptedly the work which lies more particularly within its own peculiar sphere.

A. W. CURRIE.

THE UNIVERSITIES AND TECHNOLOGICAL EDUCATION.

Second Paper.

NEARLY three centuries ago Robert Boyle came to Oxford aglow with zeal for the pursuit of chemistry, a study which he was the first to establish as a science and endow with the title of a philosophy. His work, it appears, aroused bitter animosity; he was attacked in the University pulpit for his theories and their corrupting influence; above all, indignation was felt that he, a gentleman by birth and position, should concern himself with low mechanical arts.*

If times had not greatly changed, the prospect of those coming here to-day to proclaim the University rights, not of pure science, but of technology, would indeed be cheerless. But times have greatly changed, and whilst, as the centuries have passed, the best of the ancient ideals that dominate this illustrious seat of learning have become more precious and inviolate, and whilst the chief glory of the University still lies, I suppose, in the realm of ancient studies, there has been so wide an expansion of intellectual sympathy that to-day natural science is in brilliant display, and technology itself is not only condoned, but in a measure practised here.

It is no part of my purpose to urge upon Oxford an extension of this latest province of her work. It would be an impertinence, even if I felt eager, as I do not, to suggest it. But I hope it will not be an impertinence to make into something of a text the historical facts just recalled. I have always thought that our difficulties with technology have arisen chiefly from the belated and stinted cultivation of natural science in the ancient Universities. For it is they that have to so large a degree given the law intellectual and have set the currents of our education. If natural science as it arose had been gathered to the older studies and had flowed in its natural courses, the mechanical arts and those who follow them would surely have been brought long since into a very different relation with the academic world.

Those arts which are first in importance to hungry, naked, and pedestrian man were the last which man learned to imbue

* Prof. H. B Dixon, *Address to Section B, British Association Reports*, 1894 (Oxford), p 596.

with rationality. The succeeding arts, which regulate communal life, gave birth to professions that soon became learned; the economy and safety of communal life gave leisure for the disport of fancy; and so it happened that when the range and achievements of man's intellect in the pursuits that relate to human intercourse and to the imagination had already reached such magnificence as to send illumination down the ages, the science that intellectualizes the mechanical arts was only just emerging from the close concealment of its material garb. The early promise soon was blighted and natural knowledge languished through the Middle Ages, leaving industry to make its progress in the light of art but in the gloom of empiricism.

When at last science took on rapid growth, when the stir of invention quickened the pace of humanity and we entered upon the riot of the industrial age, there ensued a period lasting till now when industry has been struggling, consciously and unconsciously, for its intellectual rights, lacking most grievously the sympathy, the prevision and the leadership that should have been forthcoming from the established centres of educational influence, the Universities. And so we find ourselves in a land that has been forced to provide for itself, as it could, its bread and butter studies, its rations of useful knowledge dealt out to the toiler when his day's work is done, its technical schools, commercial academies, colleges of science and I know not what else, standing outside and in the shade, improper still I think in many minds, to what is education proper. We are not to blame those who have been busy in this work. "Necessity has no law and expedience is often one form of necessity. It is no principle with sensible men of whatever cast of opinion to do always what is abstractedly best. Where no direct duty forbids we may be obliged to do, as being best under circumstances, what we murmur and rise against as we do it. We see that to attempt more is to effect less; that we must accept so much or gain nothing; and so perforce we reconcile ourselves to what we would have far otherwise if we could . . . it may be the least of evils . . . it may be professedly a temporary arrangement; it may be under a process of improvement; its disadvantages may be neutralized by the persons by whom or the provisions under which it is administered."

But we live in a time when we are forced as never before to consider our ways, to look beneath the surface of things, and to take thought for the future. It is a time when we must go back to principles and consider what, in Newman's words that I have just quoted, is "abstractedly best," a time when we may be

excused for aggressiveness in asserting the fundamental principles of our faith.

Speaking in terms of our subject to-day, we may say that we find ourselves a people far spent by the cost of victory over a nation of technologists, a nation which had carried to the highest point the training of its people in applying exact knowledge to the mechanical arts of both peace and war, the knowledge that enabled it under stress to make gun-cotton from wood and air, to conserve its fats for food by making glycerine from starch, to fire a shell seventy-five miles, and to do a great many other marvellous things in the mastery of matter. I have not heard of any direction in which our enemies could be charged with faults attributable to a neglect of technology. On the other hand, there is abounding evidence that without it they would have been defeated in a year. The tale of the forced march of our own technology in this war of chemists and engineers has not yet been fully told, and perhaps its triumphs are only dimly understood.

In the face of all this it would be excusable perhaps to make this the occasion to preach the urgency of technology. But that is not my intention; I am far more anxious to raise my voice against its unbridled pursuit, to draw attention to the restraints under which it should be fostered, and to plead for what seems indispensable to its worth.

Whatever may have been the ultimate source of German decadence, it has proceeded step by step with changes of outlook, of aim and of organization in education that were of melancholy significance to those who had any knowledge of the Germany of old. The reproach was not in their becoming a race of technologists, but in their education from beginning to end yielding to the domination of a spirit which set above all else the worship of power and material efficiency. Surely the supreme educational lesson of the war is that we teachers should stand shoulder to shoulder against all the forces that tend to the vitiation of the atmosphere of education and the desecration of our temples of learning.

Unaltered as is my eagerness for the promotion of technological studies and undiminished my belief in their University rights, I can therefore, and do at the present time, listen at least with patience to alarmist voices more than hinting at the elimination of technologies from our Universities. It is more grateful to the ears than some other prescriptions coming from advisers who would act on the precept that it is lawful to learn from the enemy, but would, it seems, have us learn just the wrong thing.

But we must be careful not to be thrown off our balance by a laudable emotion. It is perfectly certain that our national circumstances require, and will require in an increasing degree, the application of the highest knowledge to the industrial arts. An increasing proportion of those endowed by nature with the best brains and the strongest elements of character will be absorbed by industry, simply because the maintenance of industry is a condition of existence and its maintenance becomes more and more exacting of both mind and character.

The tendency of those who are so susceptible to anything that seems to threaten a depreciation of University life to say "let industry have the brains it wants, get them trained how it wants, and where it chooses—*anywhere but here*," seems to me a fatal closing of the eyes to what is written in blood on the pages of recent history.

Not less wrong, in my opinion, are those who still maintain that the Universities have done their whole duty when they have provided the unspecialized studies that are fundamental to industrial science. We know, indeed, that these are all-important, and that men well trained in them, if properly used, will learn elsewhere in the end effectively to apply them. But that there exist ranges of special knowledge, essentially high science, lying between the abstract sciences and the mechanical arts, and that a training in this knowledge may be organized to great advantage in teaching institutions, will not be disputed by any one who has regarded the evidence at hand. Certain it is that these so-called technologies will be taught somewhere, just as the specialized high studies of theology, law and medicine are taught, and where they are taught well, there will they be sought. They will be sought now as never before, and what appears to be the matter most needing consideration in our discussion to-day, the point on which I wish to focus attention, is this, that unless the Universities collectively embody enough high technology to meet adequately the prospective demand, we shall inevitably cast a large section of our best industrial manhood into institutions wholly devoted to one type of studies and dominated by aims which, however worthy, are directed to the object of immediate material utility.

I cannot believe that any thoughtful Englishman can now regard such a prospect with equanimity. He has surely realized too well the functions of a true University, and what we must exact from it for the education of our race; that it must be, above all, a centre of life in which we secure the influences that will regard and tend the idealism of youth, that will bring into

good fellowship and sympathy young men coming from all quarters, cherishing every kind of healthy interest and going out into the world to every kind of legitimate pursuit. It must be a community where traditions of honour and high aims are created and impressed, and where no study is at home that is not fraught with a continually disinterested exercise of the mind.

"It is pledged to admit," says Newman, "without fear, without prejudice, without compromise, all comers, if they come in the name of Truth; to adjust views, and experiences, and habits of mind the most independent and dissimilar; and to give full play to thought and erudition in their most original forms, and their most intense expressions, and in their most ample circuit. Thus to draw many things into one, is its special function."

It must be, in short, the place that Milton conceived as giving the "compleat and generous education that fits a man to perform justly, skilfully and magnanimously all the offices both private and publick of Peace and War."

It is in such an environment surely that we must educate as many as we can of those who are to be the guiding spirits of the working world.

It has, I believe, seemed to many of us here, and certainly to some in the country itself, that the technological Universities of Germany, the much vaunted "*Technische Hochschulen*," have, in the field of education, been strikingly symbolic of a change of spirit in the nation. True it is that they have not usurped the very name of University, but they made pretensions and acquired prestige and powers that in effect gave them an equal place, or even a prior one, in the esteem of their country. The German, it is true, has never abandoned his formal homage to the older University ideal, just as he has maintained in external form, over much of his educational system, the discipline of what are called humanities. We have found the modern German still in a way informed in things intellectual, moral and æsthetic, but we have felt that this equipment was becoming more and more a conventional outer garment, according less and less with the spirit it enveloped.

Nothing has happened that can rightly lead the Germans to relax their cultivation of technology, but among the signs of their regeneration we shall surely look for the return of a true allegiance to their older ideals of Universities and all they must stand for in the scheme of a truer civilization. They must acknowledge that there is something in University life transcending in importance the achievement of efficiency, and that the first care of the nation should be that its education proceeds where influences

prevail that will touch the spirit of youth to right ambitions and ideals of life. Among the excesses of regimentation the Germans have, I think, good cause to reconsider their educational plan of isolating seminaries of technology.

If thus, in the light of recent history, I am brought to plead more earnestly than ever for the ranging of this set of studies, for their own sake, within the University, it is in no spirit of condescension nor without a strong conviction that they have much to give as well as to gain. It has been my own fortune to live in a University which, perhaps more than any other, has made ventures in the domain of technology and has sought to bring into an articulated and harmonious whole, without preference or priority, without caste social or intellectual, on equal terms and with equal rights, the studies, teachers and students concerned with both professional and industrial occupations. I do not know that there is one among our teachers who would not acknowledge advantage from this association and bespeak from it, when rightly achieved, a broadening rather than a narrowing influence on the best elements of University life.

I hope I am not insensible to the safeguards that must be observed. A tendency to extravagance lies in every new movement, and in relation to technology it is most important that there should be restraint of ill-considered plans. These safeguards I endeavoured to outline when speaking on this theme at the Congress nine years ago. It is perhaps permissible again to urge that the Universities should observe a due proportion and economy by differentiation in their technologies according to the natural homes of these, that they should study co-operation in policy and encourage interchange of students. More important still as an actual need of the day seems this, that Universities which associate themselves with technological institutions of originally independent growth shall bring the studies, teachers and students effectively into the precincts and life of the University. Equally important does it seem that this should be done so far, and only so far, as these studies, teachers and students can be rightly regarded as conforming to the standards of a University. It is to be feared that there lie here practical problems of grave difficulty, and that we may be entering upon a troubled time. The difficulties for the Universities lie mainly in the suspicion they so easily incur of possessing all those failings that are apt to beset aristocracies, and when they are prescribing restrictions in the light of experience, and with a disinterested desire for the common good, they may easily enough be regarded as acting merely in a disdainful spirit of exclusiveness. Another danger, of course,

lies in an eager spirit of accommodation, a disposition to please the multitude, and a love of peace, amid which essentials may be sacrificed to gain the mere semblance of success.

A discussion of University technology in England to-day cannot respectfully leave unmentioned the new organization that has been created by the State for the care of scientific and industrial research. I will at once say frankly that I have never been enthusiastic for this enterprise and that I have watched it with anxiety. This is perhaps natural in one who, with a different policy, has been devoted through life to the same object. But I hasten to acknowledge, as every one must, who is informed of the facts, that the new organization is an imposing example of the British talent for improvising expedients adjusted to the immediate alleviation of complicated troubles, expedients that are adaptable to varied needs, and however faulty in places and however threatening as a permanent *régime*, may be temporarily acceptable.

That our industries are being induced, under the Department of Scientific and Industrial Research, to betake themselves to the fostering of technology is, of course, in itself a source of gratification. That they are being indoctrinated with the idea of co-operation in the pursuit of common ends and are being asked to take broad and liberal views of science is all for good. The flux and reflux between Universities and the National Research Associations of men and topics will no doubt be productive of mutual advantage. I hope I exhibit some capability of seeing what is good in this new State Department. Of what appears not good I will only say this, that there seems most room for anxiety in the creation of isolated institutes for technological research, which may detach from Universities a most valuable type of studies and of men that will themselves suffer from their isolation. The worst thing of all would be what I know already to loom in the minds of some of our manufacturers, namely, that the associations should ultimately each beget its own educational institution. I do not think for a moment that any one in a responsible position is unmindful of these dangers or would willingly favour anything tending to the prejudice of Universities or to the narrowing of education; but if it is thought that the anxieties to which I have given expression are groundless, I can only reply that they are the product of life-long intercourse with an industrial community.

In the restlessness of our present world it is difficult to gauge the currents of opinion that will mould or remould the institutions of our country. But so far as education is concerned it seems clear that, if we are to accept their spokesmen, the rank and file of the

teeming world of labour have set their heart in something like clear purpose to the ends that shall be sought. They will not have it that their new and increased education shall be permeated and dominated by a sordid or material aim. They begin to suspect the agencies that make their chief promise a cleverer performance of the daily task or the earning of a larger wage. In their revulsion from such an object they threaten to repudiate what in truth in its proper place, among other things, will lighten and enlighten their labours.

There is no sign of the times that to me seems more hopeful, for I see in it the promise of an end to the far-reaching and incalculable mischief that has come of a false distinction between useful and useless knowledge. But there are opposing forces to contend with.

It seems to me that there is no service of Universities more needed now than to exhibit in the centres of highest education, which can so easily lead the way, the true intellectual nurture of industrial life—the embodiment of technology in full and fruitful fellowship and interplay with accepted liberal studies.

ARTHUR SMITHELLS.

THE UNIVERSITIES AND TECHNOLOGICAL EDUCATION.

Third Paper.

Universities or Separate Colleges.

J. S. Mill once told the University of St. Andrews that "a University is not a place of professional education." That was in 1867. Since then the scope of University studies has gone on widening, and at an increasing rate. It is no longer true to say of most Universities that they are not places of professional education. My belief that technological knowledge and technological studies are not out of place in a University rests upon the following, among other considerations.

It is, I think, generally agreed that if the wealth that the war destroyed is to be made good and more than made good, if the material conditions of human life are to be steadily improved so that the mass of mankind will enjoy a sufficient degree of material well-being to make spiritual well-being possible, if the world or any section of it is to be able to support the discoverers and the thinkers, the seers and the prophets on whom it so largely depends for the things that matter most, then productive industry must be directed by men who have not only submitted to a strenuous intellectual discipline, but have also studied, under the best possible conditions, the principles that underlie the practice of their profession. These principles are becoming an organized body of thought; in short, a science; and that science is technology. None of its many branches is identical with a branch of physical science, so that University courses in pure science will not meet the needs of the technologist. One special reason is that the captain of industry has to apply the principles of many human studies—applied psychology, industrial administration, economics, and the like—while the professional practice of the student of physical science depends only upon the principles of his science of inanimate nature. A more general reason is that, since the future captain of industry and the future man of science will be receiving very different training when the former begins to obtain practical experience of his profession, continuity in education will only be secured if their courses of study also differ in the immediately preceding years.

So University courses in "pure science" will not meet the

need for the highest technological education. In Germany, before the war, this need was met, not by the Universities, but by separate specialist institutions outside them. Göttingen was the only German University with an engineering laboratory. In Britain, with one notable exception, the opposite course was followed. Important sections of German opinion now believe that the British way was the wiser of the two. Indeed, the British way would seem better both for the Universities and for the industries. It is better for the Universities because the presence of men—and, when I say men, I am by no means excluding women—who are looking forward to industrial careers, widens the interest of the other undergraduates and so improves that immensely important side of University education which depends upon the influence, not of teachers upon their pupils, but of fellow students upon one another; and this effect is enhanced in value where the students of technology regard industrial careers as synonymous with lives spent in satisfying essential human needs and in bettering the material conditions of life on this planet. The inclusion of technological studies also benefits the Universities by keeping them in close touch with leaders of industry and commerce, men who are indebted to their University for the foundation of their subsequent leadership, who have not forgotten their debt, and who look to their University to supply their assistants and successors. The influence of the University on the immediate thought and action of the community is thus increased, while business advice and financial support for the University is secured at the same time.

The provision of the highest technological education by Universities, instead of by separate institutions, tends also to benefit the industries, by harmonizing the ideals and purposes of leaders of the people in many different walks of life, by widening the interests of the future captains of industry, and by accustoming them to an atmosphere of scientific inquiry, so that in due course they will encourage research, well understanding that research is something more than experimental tests—more even than attempts to discover immediate industrial applications of established facts.

It is true that under certain conditions these advantages to the industries, to the Universities, and to the nation at large, might conceivably be balanced, and even overbalanced, by disadvantages. Three possibilities of this kind need to be noticed.

In the first place, if the Universities of any industrial community were so inferior as to be incapable of providing adequate

technological education and training in methods of research, it might be better for the industries and even for the whole community that this essential provision should immediately be made in separate Colleges, without waiting for the Universities to improve sufficiently to undertake this work.

Or, secondly, if we could imagine the proportion of University trained men required in industry increasing much beyond the proportion required in other walks of life, we might fear that technological students would swamp the Universities, or at least damage them by disturbing their balance. But this nightmare disappears when the facts are brought to light. Competent industrialists maintain that British manufacturing industry will not, for some time, require more than one University graduate in every fifty persons it employs; and this is only half the proportion of University men that ought to be found in other walks of life, since one in every twenty-five Englishmen ought to receive a University education unless England is to remain, in this respect, permanently behind the greater part of the English-speaking world.

Or, lastly, if it could be shown that the technological studies required to train the future leaders of industry were inferior to other branches of University education, either because they demanded less previous knowledge and ability, or because they provided a less strenuous intellectual discipline, then indeed a University might do itself more harm than good by including a faculty or department of technology. But, if technological studies used to be inferior, they need not, and must not, be so any longer. The resources for the highest technological education possessed by English Universities and Colleges are far more restricted than those of England's principal industrial competitors abroad. If the best use is to be made of these limited resources they must be reserved for the ablest and best prepared among the candidates for admission. And this can now be done, since the increased demand for highly trained men in industry has produced a supply of able and well prepared candidates exceeding the available places in University departments of technology. It is therefore possible, as well as desirable, for the Universities to require of would-be technologists at least as high an entrance standard as is fixed for admission to any Honours School in whatever faculty. Nor is there anything to prevent the Universities from meeting the demands of the industries (and so of the nation and the world) by providing as strenuous an intellectual discipline for the first-rate students of technology as for any other honours men. I shall presently have something to say on how this may be done.

Age of Entry to Universities.

But, if I may now assume that a University is in general the right place for the highest education in technology, I had better begin at the beginning my short summary—all that time permits—of the conditions under which these studies should, in my view, be conducted. If I present my view dogmatically, it will, I hope, be understood that I do so only in the interests of brevity and not at all from failure to realize that I am dealing with many open questions.

In the first place, then, boys approaching the University through the normal avenue of the Secondary School should begin their undergraduate studies at or soon after the age of eighteen. Girls may well take a year longer over their intermediate secondary education, and so enter the University a year later. And the future engineer will often do well to spend some time—but not too much*—in an engineering works between School and College; perhaps from Christmas until the following October would be ideal if both School-leaving and University-entrance scholarships could be awarded, as those of some Oxford and Cambridge Colleges already are, just before Christmas. But, in general, "Eighteen should be the normal age of entry from Secondary Schools to the Universities," † so far at least as boys are concerned. It is, however, still the practice of most English Universities to make sixteen the minimum age for entry. So long as this minimum is only intended to mark the practical limit of an age-of-entry frequency distribution whose mode is at eighteen, this lower limit need not be altered. But that eighteen, rather than seventeen

* "Something may be said for the view that the time spent in works between School and College is of great use in bringing the student into contact with things about which he will study at College, in broadening his outlook upon the world, and in subjecting him to works of discipline. As, however, he has not yet learnt (from advanced secondary studies) the principles involved in the machinery and processes displayed in the factory, he cannot hope to acquire knowledge at as great a rate as during the two years' apprenticeship following his College course. For this reason, the time spent in works between School and College should not extend over too great a period, and this period should not reduce the essential training in works after the College course has been completed. The abler the student, the less necessary in general is the short works course between School and College. Perhaps an ideal arrangement would be for a boy to win his University scholarship in December, leave School at Christmas, spend nine months in the works, and enter upon his College course in the following October."—*Report on "Engineering Education and Research," approved by the Council for Organising British Engineering Industry, since combined with the British Engineers' Association, in* 1916, p. 10.

† Report of the Committee appointed by the Prime Minister to enquire into the position of Natural Science in the Educational System of Great Britain, 1918 (Cd. 9011, p. 27). The Report adds: "In making this recommendation we are supported by all the witnesses who have given evidence to us on the subject."

Compare the findings of the Consultative Committee of the Board of Education in their Interim Report on Scholarships for Higher Education: "For those who are to go to the Universities the normal age for completion of secondary education should not be less than seventeen; eighteen, or even nineteen, is better" (Cd. 8291, p. 15).

or less, should be the modal age of entry is clear from the fact that, of the very small number of men who still enter Universities under seventeen years of age, an unduly large proportion fails to make good.

University Entrance Tests.

If eighteen is to be the modal age of entry from Secondary Schools into Universities, and if, as I am about to suggest, most undergraduates (including every student of technology) should read for a degree in honours, we may agree with the Royal Commission on University Education in London that "The University should draft its regulations for admission with a view to making the Higher School Certificate . . . the normal qualification for registration." At all events, no candidate should be admitted to a faculty or department of technology who has not reached the standard of the Higher School Certificate in the subject or group of subjects which he is going to make his special study in the University.

But it is the object of a University entrance test, not only to ensure that a candidate possesses a sufficient special knowledge of his own subject or group of subjects, but also to prevent the damage to the University and to the individual student that would follow if he were admitted without sufficiently wide or general knowledge to enable him to play his part as a member of the University, and afterwards as a citizen of his country and of the world. A University entrance test should therefore consist of two principal parts: a test of general education as well as a test of special knowledge. While it must remain open to every University to decide what special knowledge students must possess before entering any particular Honours School, all British Universities should, if possible, agree that whatever evidence of general education is satisfactory to one of them, whether in the United Kingdom or overseas, shall be accepted by all the rest. Then, for example, the Canadian or Australian who has qualified to enter one of the Universities of his Dominion and afterwards discovers that the particular studies he wishes to follow can better be pursued in this country, will be qualified to begin them so soon as he has brought his special knowledge up to the standard required by the University he seeks to enter in the United Kingdom. He will not, as too often happens at present, have to return to general school studies in order to pass a new test of general knowledge.

The minimum standard of general education required of pupils from Secondary Schools in England might well be that of the School Certificate Examination. School Leaving Certificates, involving no "external" examination, might also be accepted

under suitable conditions. It is, in any case, essential that special arrangements should be made for testing the general knowledge of candidates of mature age who are not approaching the University through the normal avenue of the Secondary School.

Undergraduate Studies in Technology.

I have said that the courses of study followed by most undergraduates in English Universities, and by all University students of technology (with the temporary exception to be noted in a moment), should resemble the work now required for honours rather than for pass degrees. In English Universities, honours courses generally differ from pass courses in being far more coherent as well as of a higher standard. The difference in standard is, as a rule, much greater than the difference between the standard of knowledge required of the honours man and that required of the pass man on entering the University; for, while the former concentrates his attention upon his special subject or group of subjects, the latter concerns himself equally with several separate branches of knowledge, and so fails to reach high attainment in any of them. And this lack of coherence separates pass from honours courses by a far wider gulf than difference in standard. It is principally because the honours courses are more coherent, and only in a less degree because of their higher standard, that they afford a better intellectual discipline; are, I think, better adapted to increase the general ability of the students; and, in any case, make better use of the resources of English Universities. It is true that many of these honours courses would do well to aim at somewhat greater comprehensiveness without sacrificing their essential coherence; or, in other words, to aim at forming a wider, but still a single, interest. It is also true that the Universities need to provide suitable courses of study for a limited number of men and women whose ability and previous knowledge are insufficient for honours courses, but whose future walk in life makes it nevertheless desirable that they should spend at least three years under the influence of University students, and especially of their fellow undergraduates; and these pass courses of the future, ceasing to consist of random selections of heterogeneous studies, should possess instead the coherence and unity of purpose that now belong to honours courses alone.

But there is no need to seek technologists among the pass men—even of the much improved type that coherent studies are likely to produce. It is rather to the honours courses that we shall look in the future for an essential part of the training of

the men that our industries most urgently require, men with creative minds, inventors of new appliances and processes, men who shall not merely follow existing practice, but cope with new problems and even lead in new lines of advance. These are the men that the industries have long needed, and now at last demand, from the Universities. For other kinds of men the industries can look elsewhere.

If, however, the University honours schools are to produce men of this higher type, they will do so, not because of the knowledge they impart, wide though it be, but because of the discipline they provide—because of the stress they lay on the acquisition of general ability, or skill in thinking, along with knowledge. It is general ability, skill in thinking, skill in applying old knowledge to new situations, rather than knowledge itself without such skill, that now as always marks the really practical man. In fact, if his undergraduate course can, as Huxley says, "give him real, precise, thorough and practical knowledge of fundamentals," the future technologist of the higher type may well wait for subsequent experience (in works, mill, or factory), postgraduate evening classes, and private reading to develop further his technical and professional information to a marketable standard. Whatever letters he may be able to write after his name, his undergraduate course should have aimed at making him a Bachelor of Arts, skilled in the art of learning, and only incidentally have given him a body of scientific knowledge capable of immediate application. Indeed, when the systematic training of young graduates during their "college apprenticeship"—the two years or so following graduation spent in obtaining practical works experience—is in charge of competent "Apprentice Masters" who work in close touch with the Universities, the conferring of technical degrees might well be postponed until, after satisfactorily completing an undergraduate honours course, the candidate has also completed satisfactorily an approved course of practical training combined with part-time University study. Technical degrees, like degrees in medicine, might then be recognized as qualifications to practise a profession.

According to this view of the aim of an undergraduate course of study there must not be overmuch lecturing. Every student should keep his chief energies for his private study, since it is his own rather than his teacher's activity that will develop his skill in thinking. He is, at this stage, his own chief educator.

Honours courses, whether in a branch of technology or in any other subject, should not be designed to introduce the student

for the first time to work below the standard marked by the Higher School Certificate, although they may well include the revision of such work under the direction of University teachers who are able to place familiar fundamental matter in a new perspective; and indeed this business of placing familiar matter in a new perspective should be undertaken at the earliest possible moment after the undergraduate has entered his University. In his first year, and even in the first term, he should become acquainted with University teaching at its best. But, since some years must elapse before the present provision of advanced secondary education in England is increased sufficiently to enable every boy, who is approaching the University by the normal path, to have spent two years in the sixth form of a Higher Secondary School before beginning his undergraduate studies, it will, for the present, be necessary for Universities to provide preliminary one-year courses, preparatory to the three years' undergraduate course in an honours school. To these preliminary courses will be admitted boys who have reached the standard of the School Certificate examination and who have satisfied such other conditions as may be imposed by the University concerned. Each preliminary course will aim at enabling these boys, after one year's work, to enter undergraduate (honours) courses as well prepared as boys who have reached the standard of the Higher School Certificate.

All undergraduates should be afforded opportunities for studying subjects outside their own specialisms. In particular, students of technology and applied science should be encouraged to hear lectures on economics, applied physiology, and other aspects of the nascent science of industrial administration. Lectures by experts from industrial concerns and by business men should be provided in their interests. Visits to works, mills, and factories ought also to be arranged. And no student should be given his degree unless he can read his own special subject in at least one foreign language.

But, despite all these facilities for, and encouragements to, studying subsidiary subjects so as to widen the student's single interest, it remains true that the chief aim of an undergraduate course should be to cultivate skill in thinking by concentrated study of deep lying principles in some particular branch of knowledge.

In urging that the chief aim of an undergraduate course must be to cultivate skill in thinking, rather than to impart information, I do not at all mean that such a course must be detached from practical things. It is no more possible to develop skill in thinking without knowledge than to acquire skill in the use of tools without material to work upon. Technical knowledge is, in fact, a

most excellent foundation and medium for cultivating skill in thinking.

Postgraduate Professional Training.

To the technical knowledge which the student of technology has acquired as an undergraduate, he should go on adding after taking his degree. He should widen his knowledge not only as a "college apprentice" in works, but also in University part-time (evening) classes. Attendance at these classes will also help him to keep up to date his knowledge of new advances outside his own particular line. And his attendance will benefit the University as well as himself; for professors and lecturers who take University part-time classes in technological subjects find that evening students who are engaged all day in industrial practice are hardly less effective than their own consulting work in keeping them in touch with the most recent industrial developments. The provision of such classes is, moreover, a duty of any University in a great centre of population; and only by fulfilling that duty can the University hope to retain in full measure the goodwill of the community to which it must look for material as well as for moral support.

Research.

It remains to add that the abler students of technology will do well to devote two years, either immediately after taking their degrees in honours, or after their subsequent "college apprenticeship," to further whole-time study combined with training in methods of research. In their provision for organized graduate study and training in the methods of research, English Universities have, for the most part, lagged behind those of America and Central Europe. But they are now alive to the deficiency and, with the aid of increased Government grants, are taking steps to make it good. The establishment by most English Universities during the last few years of a new research degree, to mark the satisfactory completion of at least two years of graduate study and research, is evidence that the Universities now realize the need for courses of this kind. It is to be hoped that these courses will receive graduates from other Universities at home, as well as from British and foreign Universities overseas. Interchange of students between different Universities, with all its attendant advantages for the students and for the Universities concerned, —as well as for the larger interests of the co-operation, interdependence and friendships of nations—can best take place at the

stage marked by graduation. Again, while every provincial University may well attempt to provide the various undergraduate courses required by the province which it principally serves, no University can offer every necessary course of graduate study and research. Transfer from one University to another on graduation should therefore be a feature of a national, as well as of an international, system of education.

It is not, however, to be supposed that the training of students in methods of research is the only object of research work in Universities. One of the chief functions of a University will always be to extend and organize knowledge. Moreover, as Lord Haldane's London University Commission have remarked, the University professor or lecturer who is doing original work in his subject can best inspire his students to study it with enthusiasm and to make the necessary effort for its mastery. And, finally, any attempt to train the future leaders of industry, as well as of other departments of public service, in an institution where research was neglected, would waste a most valuable opportunity of making our future leaders in politics and government, as well as in industry and commerce, realize the importance of encouraging research, and of appreciating and applying its results.

J. C. MAXWELL GARNETT.

THE UNIVERSITIES AND TECHNOLOGICAL EDUCATION.

Fourth Paper.

TECHNOLOGICAL education may be defined as the development of those sides of learning which will enable us to extract the highest possible good from the resources of the world, and in the process to make life at least endurable and if possible pleasant to the maximum number of people; to avoid waste and extravagance in both production and use; to keep and leave the world beautiful and peaceful, and to do this with such a margin of economy that we deplete as little as possible our children's heritage in the earth of which we are but tenants for life.

In the use of every kind of resource, animal, vegetable, or mineral, man has been woefully extravagant, partly through thoughtlessness, but mainly through ignorance. Mines, water supplies, oil lands, soils, forests, the greater mammals, even the fishes of the sea, have been or are being exhausted and left derelict, in most cases long before they need have been, and often with rich reserves still left, but now and probably always henceforth unobtainable.

To take their share in improving this state of things is a task not unworthy of the greatest and most ancient Universities, as well as of those of newer growth, and of those other institutions which, because of their heart-whole and deliberate devotion to this end are not yet deemed worthy to be reckoned as Universities.

Among the functions of these Universities and Institutions should be the training of men who are to lead the industries forward in the direction of higher efficiency, smoother and more salutary working, and increased production; men who shall know sufficient of the laws of Nature to extract through their operation all the energy and material to which they are entitled; who are full of "divine discontent" and eager to improve every process in which they are engaged; and who never forget that Time the Avenger, tardy but sure, will exact from them the penalty for any thoughtlessness or neglect. The scheme of education that will be evolved when this end is held in view will not greatly differ in its method from the older forms of literary or scientific learning, nor will its value be less as an instrument for equipping the intellect and training the mind. It is only

the aim that must be changed now that our lives have become more complex, and our environment so different from what it was in the past.

My own experience has been solely with those sides of Technology which spring from the applications of science to industry, and to that side of the subject I propose to adhere, leaving other branches to be dealt with by those more competent to do so.

The Student.

I think it is only reasonable to demand that the Technological student should come from School with a really good general education, and the culture which such an education should give. He should have such a knowledge of languages that he can not only use those he knows, but will be able without great difficulty to acquire any other which may prove essential to him; such an acquaintance with literature that he really understands how to read and extract from the printed word what it is able to give him; facility in writing clearly and intelligently; so much knowledge of geography and history as will enable him to get hold of any information he may require; and a thorough grounding in mathematics and elementary science.

Probably most University teachers are agreed that while the matriculation, a test of general culture, should be completed by the end of School life, preparation for work of intermediate grade requires what few Schools can give. At this stage, while the student is at work on several sciences, he is not merely acquiring an equipment which will be essential in his later and more specialised studies, but he is testifying to his teachers his special aptitude or the reverse for scientific work in general, and for higher work or some particular branch of it. It thus becomes possible to switch him on to his appropriate line, or, if needful, to arrest his progress altogether. Here, as much as later, the best Technological Institution will be that which deals with the widest range of subjects, from among which the student can be advised to select those which are most serviceable for mind-training, those of the greatest ultimate use to him, or those of the most searching quality for his individual case.

I am aware that the Schools are aspiring to teach up to this stage; chiefly, I gather, because they do not want to part with their pupils too soon and feel bound to organize courses of study which will induce them to remain longer at School. I would venture to suggest that there are other things which might be more usefully done. For instance, after pupils have been taught

to write with ease and grace about nothing in particular, they might learn to write about something they really know, not ungracefully, but accurately, exactly, cogently, and briefly. It has been said that many scientific workers cannot write tolerable English. I admit the impeachment, but would ask with all respect who it was that taught them ?

After the Intermediate period comes the study of the group of sciences and arts germane to the professional training. The ideal is perhaps that for each final subject there should be a special group of classes leading up to and qualifying for it. This is of course wholly impracticable with the resources at our disposal. The best that can be done is to pick out in each subject those matters which are common to a number of Technological subjects, to teach them to mixed classes of convenient size, and to supplement them where necessary by special additional instruction or direction. The amount of common matter is much greater than is generally supposed, and such courses, if thoughtfully designed, will go a great part of the way. Here again the strength of broad-based institutions is manifest, for in them it is possible, without undue expense, to make use of all existing departments, and where it is necessary to found new ones they can be fully and economically employed. There must necessarily be either incompleteness, or waste of effort and overlapping, in the case of institutions devoted to a single branch of Technology; and such institutions should never be founded unless it has proved impossible for bodies of University rank to undertake the work.

It is essential that in every subject there should be associated with the other teaching a sufficiency of practical and exercise work, and it is here that the necessary differentiation is most usefully introduced. The principles are the common material, the illustrations admit of special adaptation. In my own case a very varied group of students passes through a single course of lectures on principles. In the practical work there is differentiation between those taking Biology and Chemistry, between Miners and Oil Technologists, and between Engineers and Geologists.

Curricula.

It is perhaps as well to insist here that Technology must be based on a thorough knowledge of the relevant sciences treated as pure sciences. In the past most industries have advanced by means of a cumbrous and exclusive course of trial and error. It is only in the more recent developments that advantage has

been taken of the principles and general laws worked out by the scientific man in his laboratory, the royal roads in both the pursuit and the applications of science. In future the Technologist must be a scientific man, not only in his knowledge, but in his attitude and outlook. In his life-work he will not be successful if he is satisfied with things that are. He is to be the introducer of new things in a *régime* which may fallaciously appear to have reached finality. He can only be an innovator if his knowledge is wide, and if it is so engrained in him that he can make full and practical use of it. He must learn how to get at the stores of recorded fact and inference, an ever-growing treasure, to extract and weigh it for himself, to detect where it is short and unsatisfying, and to ascertain and profit by the methods whereby in similar cases the gaps have been successfully filled. In this part of his education there may perhaps be some danger of indulgence in too varied and exhaustive reading, even of what may be called browsing, but this is not a grave danger if it results in the quickening of interest. No one can predict where his future career may lead him, and I have known many instances when casually acquired information, by its unexpected application in later life, has made good. And after all this is the growing time when the intellectual appetite is keenest and the power of absorption greatest, even if the digestion is not so expert in its operation as it will be later on. It may be that many years of strenuous life will intervene before time or opportunity for such general improvement recurs, but the treasure already stored up will be a perennial joy.

In every science the great aim should be to bring out the principles of the science and the general laws which have been established, the lines of thought and experiment on which they rest, the means by which they can be and have been tested, and the consequences which flow from them. The teaching scheme is thus made easier as well as more efficient, for such principles are common ground, and are equally necessary to each branch of technological instruction. It is in the illustration of them that the teacher must bring out their contact with the technical practice of industry.

While holding fast to the principles of science it is essential that the scheme at this stage should be exceedingly elastic, capable of rapid variation to meet the advance of industrial applications. What is at once the hardest task and the severest test of the successful teacher is not how much he can teach, but how much he dare leave out. In the time at his disposal, he is compelled to squeeze out anything which may be at all superfluous, and he

must be assured that everything he leaves in his course has its ultimate function. But he must be firm in meeting the question, which few of us escape, " What use is this to me ? " He can see farther than his students, farther even, perhaps, than his technical advisers, and he should be able to show that such apparent superfluities are like the hidden strands in concrete, without which the material would fail under some of the stresses it is designed to meet. It is his duty to remember that, whatever may be a student's intentions as to his future, he cannot be sure of controlling that future. Again and again opportunities may arise for a man provided with a liberal equipment, which, taken at the flood, may lead to prosperity and success beyond anything he originally dreamed of.

The guidance of technical advisory committees is of inestimable advantage, not only in the later year or years when purely scientific work is merging into the technical applications of it, but to some extent while pure science is being studied. But in both cases their function should remain advisory, and never become mandatory. The last word must rest either with the director or principal teacher, or with the Faculty of which he is a member. If a teacher is considered worthy to be entrusted with a given branch of work, he is entitled to a fair measure of discretionary power, and he can always be judged by his results. I have found that a teacher with a good case can generally convince his committee that his views as to changes in curriculum ought at least to be submitted to the test of experiment. If the experiment proves a success, he, as a rule, has little further trouble.

In the later year or years of the course, the instruction will naturally become more highly specialised, and if the previous scientific training has been thorough and sound, and the student has learnt how to make practical use of his knowledge, progress will usually be rapid. Books and equipment for this part of the course are being produced in great numbers, and already it is becoming difficult to make a selection among them. While such books are valuable in providing short cuts, the student has by this time become more critical, and is capable of making use of original sources of information, and he should of course be encouraged to do so. In this way he not only extends his own knowledge, but he acquires the power of getting into the heart of his subject, and the habit of ascertaining the precise stage of development so far attained in an inquiry. This habit of search is the necessary prelude to research, and it leads to an economy of effort which will be invaluable to him all his life in advising him as to the stage at which his own individual research must begin.

The reading of the results of research is, of course, not sufficient by itself. No technological student should go out without having made an attempt to solve some problem for himself, under due guidance; but on this subject I propose to touch later. It is also essential that at this stage, at any rate, but preferably earlier as well, he should be trained in writing of what he has learnt, or in summarising the results obtained by his own practical work, in clear and concise and, if possible, non-technical language which can be easily understood by the type of man under whom his professional work will be carried on. By this means he will be able to display most clearly how much of his work he has really grasped, and how far he sees into its consequences, while he will, at the same time, be acquiring a gift of great service to him in his career. Some training in economics, business methods, accounting, hygiene, etc., should also, of course, be introduced into this stage. The goal at which each student should aim is the attainment of a bachelor's degree or equivalent diploma in pure science, or, if it is obtainable, one in his own technical branch.

Touch with Industry.

It must of course be freely admitted that something much more than book learning and laboratory training is required, and it is a vital question at what stage this should be initiated. Until a student knows some of the features of the industry in which he will be engaged, he finds it difficult to realize the significance of many parts of his training. On the other hand, if he goes into the shops, the works or the mine too soon, he is not possessed of enough knowledge to profit fully by his experience. In my opinion, the advantage of early touch outweighs its disadvantages, and the student's contact should begin early, and be renewed at several stages of his course. It is true he may at first gain little actual knowledge in the mine or workshop, but in working there for a period by the side of the men whom he will afterwards direct, he gains a most valuable knowledge of their customs and limitations, their predilections and weaknesses; and he will be laying down a foundation of experience which will usefully guide him when he comes to the difficult task of handling men himself. At the same time he will be learning the necessity for obedience to orders, and, while watching the technical skill of the expert workman, he will acquire respect for accuracy and delicacy of workmanship, and for that astonishing proficiency which prolonged practice alone can give. He will also begin to appreciate the modifications which must be introduced into scientific method when applied to the conditions prevailing in

practice. He will get to know by experience that factors must be considered in the works which are held of minor importance in the laboratory, that a new or improved process cannot succeed unless it cheapens production or promotes efficiency, and that material and *personnel* available, time and convenience, habits of customers and many like considerations, have to be taken seriously into account.

What is of hardly less importance is that at this stage he will hear a whole gamut of technical nomenclature which has before been mere jargon to him, if he has met with it at all. No one is more intolerant of the phraseology of the expert than the "practical man," but no one is more tenacious of his own terminology. It is well that the student should learn the latter while he is still in the position of the under-dog, so that it may not trip him up later.

As his course proceeds, it is natural that workshop and field experience will become of greater educative value. He will be entrusted with higher work, and so gain new experience. He will come into contact under actual working conditions with problems of like nature to those that he will in future be called on to solve, will see where room for improvement exists, and learn the conditions under which reform may be possible. He will also begin to realize the business side of his work, and acquire, if he has them not already, the habits of promptness, punctuality, and perseverance, and possibly some of that perspicacity and rapidity in thought and action which are such valuable assets to the man of business.

There are many cases in which it may be advisable that the student should break his course for an entire year or even more and come back to finish. If this is done he usually returns with quickened interest and greater determination to profit by the rest of his course; and these valuable qualities have an influence not only on himself but on his fellow students in the department to which he returns. The chief drawbacks are that he may have grown rusty in his subjects or impatient with tests and examinations: but with a duly elastic system this should not be allowed to become an obstacle. In some cases within my knowledge firms have been willing to take students over for a period in the middle or at the end of their course, making such special arrangements that they become acquainted in succession with all the chief departments of the works, and thus acquire familiarity with those branches with which they may perhaps have in future little direct concern, but for the running of which they may be responsible as they rise to higher positions. This has been done with the double intention of increasing their general qualifications and of fitting them especially for ultimate employment with

the firms in question should they justify the expectations which may have been formed with regard to them. Such a plan cannot but have good results to both parties concerned, if well-considered arrangements for the welfare of both firm and student be made.

Directors and Teachers.

One of the greatest difficulties in the future, as it has been in the past, will be the staffing of technological departments. Such departments can only exist if directed by the right kind of men; men not only of good intention, but of wide industrial knowledge, capable of dealing with students and of organizing their staffs; men of ideas and energy, devoted to their own research and that of others; and, above all, men of achieved success. There seem to be but three ways of securing such men: (1) To pick the right man whenever and wherever found, pay him his price, and leave him to teach as and what he thinks best, and to select his *personnel* and material, as well as his methods and lines of research; (2) to take from the industrial side men who have made their mark and a competence, but, from interest in their subject and love of the work, are willing to continue in harness in what is one of the pleasantest if not the least exacting of professions; or (3) to select competent and reliable men who have found touch with industry from the academic side and to allow them to supplement their pay by private professional work conducted under proper restrictions. Under present University conditions it is and probably always will be impossible for the teaching profession to compete with industry for the very best men, and the Universities will have to fill their posts from the two last classes.

To the retiring business man deeply interested in the development of the industry to which he has devoted the best years of his life, the idea of contributing to the advancement of his own branch by directing the education of his successors is often exceedingly attractive, and there have always been many such, willing to undergo no little sacrifice of comfort in doing what they consider to be a higher duty. Thoroughly competent as such a man may be, and deeply as he may be interested in his new venture, he is likely to find academic conditions somewhat irksome and to chafe at the necessary routine. He may find himself a little out of touch with students, while his teaching is likely to lean a little towards the practical side. But his influence on students is certain to be good and to impress them that his teaching is related to industrial actualities, while his knowledge

of the business world cannot fail to be of the utmost advantage to his students and his department.

The third class of man, a teacher who has become well acquainted with industry, will not suffer from some of the disadvantages just specified. He will probably be a better teacher, particularly on the scientific side, and more competent in carrying out and directing research. But as it is essential that he should be in close touch with industry, and sufficiently successful to have earned the respect of business men, the pressure exerted upon him to break off teaching and devote himself solely to industry is likely to increase steadily and make it ever more difficult to retain his services for academic work.

In most Universities men of the last two types are to be found working side by side to their mutual advantage, and to the benefit of the technological side of the Institution. In either case close, continuous, touch with their industry is for many reasons essential. It is vital that the teaching should be alive and sensitive to the rapidly varying needs of the industry itself, which can only be felt by those within the ambit of its influence.

To the students it is a great advantage and incentive to feel that their teacher has been through the mill himself, and that he will therefore know how the students' time may be most profitably occupied in view of the object aimed at, competence in their profession. Further, they will know that they are more likely to obtain good posts and that the conditions under which they hold them may in all probability be made better and more useful by his influence. On the other hand, the teacher will have knowledge as to the particular type of man or of training required at a given moment or likely to be required in the immediate future, and can lay himself out in good time to fill the demand.

A much more difficult question is as to the form such touch should take. As a general rule it would seem inadvisable that the teacher should allow himself to work continuously in the pay of a single firm. This would involve confidential work, and while strengthening his knowledge in certain branches is likely to weaken it in others, and it would certainly have the effect of alienating other firms. On the other hand, it is difficult for an expert to do good work unless he is so much in the confidence of those employing him that the whole of the factors of a problem are before him, including those which have to be regarded as secret. In this matter so much depends on the firm in question, and so much on the character of the director himself, that it is impossible to lay down hard and fast rules, which might at any

moment produce an *impasse*. Each case must be considered on its merits, the general principle being that the director should in the main restrict himself to the most advanced part of his work and keep himself as far as possible unfettered. Naturally there must be more latitude in the case of new and rapidly growing industries than in those which are older and have become more stabilised.

Difficulties are not confined to the directors of technological departments; the subordinate staffs have also to be considered. Here again the pay is generally inadequate to secure the services for long periods of the most desirable men, and it is arguable that it is well this should be so. There are many inducements to attract men to the staffs of applied science departments: The continuation of their technological education and the possibility of obtaining higher degrees, the developing of their teaching ability, the opportunity of increasing their proficiency in research and improving their status and reputation thereby, the earning of additional pay by carrying out industrial work of research character or otherwise, and the introduction to and contact with industrial men who will eventually have research work to dispose of or employment to offer. Most of these inducements exist in successful departments of applied science, and their judicious employment ought to make such staff posts highly attractive to men who hope eventually to go out into industrial life.

The brisk circulation thus set up within the department will continually throw open opportunities for the more promising students who may well regard teaching posts as a part, and indeed one of the most valuable parts, of their training, while in this way supplies of men will be prepared for better positions than could be satisfactorily filled by those just out of the student stage. But of the men so circulating, it is essential that means should be provided to retain some, and those not the least promising, for longer periods, in order to give stability to the department, and to the head of it the responsible support which he is entitled to look for.

It will also be to the advantage of every department that it should be sufficiently strong to allow one or other of its members to take an occasional period of time for the purpose of study, research, or even business work. This would react not only on the value of the teaching, but in spreading the reputation and increasing the efficiency of the department by maintaining closer touch between it and the business world. If well managed, it need not involve heavy additional cost. It is chiefly a question of organization and of a liberal outlook.

Research.

It is most important that research should form part of the curriculum of every technological student: Whatever his future career, in addition to routine work, it is certain that he will come across new conditions and new difficulties, something for which he may have met no precedent; problems, in other words, which need to be investigated on scientific lines before they can be solved. It is not essential that the research should be other than of purely scientific nature, though it would probably make a stronger appeal to the student if it bore some definite relation to the industry at which he aims. What is essential is that he should get to realize that the easiest and quickest way may often be to obtain facts and inferences at first hand, that he should learn how to question Nature, and acquire confidence that, if he can put his questions skilfully, he will usually obtain, after Nature's way, an answer which will contain, though it may conceal, the solution to his problem.

It is still more necessary that the teachers should engage in research, and naturally this in most cases would have some more or less direct bearing on industrial problems. Apart from the fact that it is only a man engaged in the production of new knowledge who can be a really first-class teacher, in no other way can he establish contact with the highest development of the industry in which he is interested, secure the confidence and respect of those engaged in it, and, incidentally, use his time profitably and in a way which may avoid the difficulty of that jealousy among firms to which I have already made allusion. The discovery of new processes and the improvement of old ones confers benefits not so much upon individual firms as upon industry as a whole, and thus industry in general, or some particular form of it of local importance, reaps the advantage. In the course of the research of the staff, hosts of incidental problems are certain to arise, which will provide attractive subjects for investigation by members of the staff and by students. An active research school is the best symptom of a live and active technological, as it is of a scientific, department; it tends to attract the right kind of student, trains the best kind of staff, and is a legitimate way of keeping the department before the eyes of business men.

If it is possible to pass the best students on to the staff for a short period before they take up outside appointments, and to afford them reasonable leisure to embark upon research, the school will be much strengthened, and the worth of the students con-

siderably enhanced when they leave. A certain amount of teaching work is by no means a drawback, for it will enable them to consolidate their knowledge and render it more accessible when wanted. Having recently risen from the status of students, they are better able to appreciate the students' difficulties than older men, and they see things more easily from the students' point of view. A larger staff than otherwise may thus be maintained, and the department will be more stabilised in the event of having to face the possible loss of one or more of its senior members. The establishment of the Ph.D. degree in so many Universities will probably find its chief use in regularizing the curriculum and research of student assistants, and will connote that its holders are men who have carried out a considerable amount of research, some of it, probably, under guidance, some of an independent character.

Another consequence of a strong research school will be to attract from outside those engaged in industry who have special problems of their own to solve, which cannot be so well dealt with in the laboratories to which they have access in works or elsewhere. Within proper limits this should receive encouragement. The introduction of outsiders of the right kind to the laboratories is of service in several ways. It "spreads the light" by keeping industrials informed as to the progress of science and the improvements in methods of investigation, and as to the precise nature, cost, and limitations of scientific inquiry. It impresses upon them the necessity for experimental accuracy, and shows how closely the sciences are now interwoven, and how results obtained in one science or branch may be imported to assist progress in another. On the other hand, it reacts healthily on the student by assuring him that the science he is pursuing has important practical applications, and enabling him to realize not only that theory inspires practice, but that practical application is a great incentive to theoretical research. Better relations are established between the institution and the industries surrounding it, mutual confidence is engendered, and personal acquaintance is encouraged to the advantage on the one hand of the industries, and on the other of the students who may find eventual employment therein.

A corollary is that in certain cases research by staff or students may be in part carried on in works' laboratories outside the University, and the considerations just set out apply as well to this case.

So long as research is of a purely scientific character, difficulties are not likely to arise, but care becomes requisite that industrial research should not degenerate into anything of the nature of

routine or testing work. This should be excluded and the Universities should not in any way compete with firms which specialize in this direction. Only where this class of work involves problems which are new, or exceptionally difficult, or need the employment or even formulation of new principles, should it be undertaken by University departments, and then only for a limited time, while special difficulties are being overcome. It is the more recondite problems which should be the particular preserve of the Universities, not only where a single department is concerned, but more especially where it is necessary to call in help from more than one, and thus make use of the fellowship spirit so often exhibited in University research, when several workers, each skilled and experienced in some special branch, are able to concentrate upon a single problem. While concrete advantages are certain to accrue to Universities from the encouragement of this type of work, it will be to the advantage of the institution as a whole to see that a due proportion of such advantage finds its way to the departments which take leading part in this activity.

The Product.

I have already made some reference to the type of men which it should be the aim of the Universities to turn out from their technological departments and it is needless to repeat. The essential point is that they should possess those qualities which distinguish the best type of scientific man. Not merely knowledge of their subject and technical ability to use that knowledge, but capability to introduce the scientific method into their conduct of everyday life, and into their dealings with their colleagues and subordinates. They must be willing to study all the conditions of their problems before they are sufficiently satisfied with their solutions to carry them into effect. These conditions require not *a* solution, but *the* solution which can be brought into operation with the least possible disturbance of the things that are, without needless change of raw material, machinery, or *personnel*, but with the advantage of diminished cost, enlarged production, and increased value or efficiency.

If this is the aim the product will be the best type of Technologist. He will not necessarily be the type of man suited to occupy immediately the highest position in his business. But the work given him to perform will be so well done that it will be impossible for his character, competence, and ability long to escape the watchful attention of his chiefs. It will not be long before he is chosen for more and more responsible work until he

attains high rank in his profession. I do not believe it is possible that men of managerial type, captains of industry, will ever be technically trained as such. The Universities should endeavour to produce such a type of man that his superiors will take him by force and almost against his will, from his technological work to direct the bigger issues.

Conclusions.

(1) As much as in any other walk of life the education of the business man must be liberal. His mind must be as agile, and he must be as well provided with intellectual weapons as any other well-educated man.

(2) A course of technological education thoughtfully laid out is, as an instrument for mind training and in the nature of the product turned out, in no way inferior to the higher branches of language, literature, history, or philosophy. The work is as hard, the problems to be solved as difficult, the reasoning as acute, the intellectual joy in success as great; while its urgency to the nation, and I might say to mankind, is one of the most pressing matters that educationalists have to face.

(3) In the multiplicity and complexity of subjects there is no longer time for the most liberal of educations to be as broad as heretofore. Some Universities are even specializing in a single dead language as an honours subject, holding, perhaps rightly, that a thorough knowledge of one is better than what can be attained, in the time available, of two. Technological education has but anticipated this specialization by a few years.

(4) There is no less worthiness and dignity in the newer education than in the old. All higher education is, and always has been, technological. The learning of the older Universities has been used, and has even been moulded for the purpose, to equip the parson, the poet, and the politician; and I understand that both the peer and the proletarian can gain from the study of classical literature some facts or theories to guide them in their respective vocations.

(5) The business man has good right to demand that the Institutions of University rank shall supply his requirements as well as they have dealt with education for the professions. The polytechnic system has not had the success that was expected in educating his foremen and workmen. He must not be again disappointed when he seeks higher education for himself. He expects, and has a right to expect, that the type of education he needs shall be not a by-play or a by-product, but a worthy aim

in itself. If the Universities will not give it to him he will take his own steps in the matter.

I desire to thank several of my colleagues who have been good enough to criticize my manuscript, and to acknowledge the help received from Prof. Fearnsides, with whom I have often discussed many of the points raised therein.

W. W. WATTS.

Discussion.

PROFESSOR J. WERTHEIMER, D.Sc. (Bristol): There are only two things that I should like to say in regard to these papers, and the first is that here in Oxford I rather expected that we should have had one paper which would have dealt with the thesis that Technology is not a proper subject for a University. I am rather sorry we have not had it because one likes to hear all sides of the question, and there are some in Oxford who do not look with pleasure on the establishment of Technological Faculties. For myself I cannot understand why that should be; for a very long time you have had highly specialized studies, Medicine and Law, in the ancient Universities, and why should it be wrong to specialize in certain departments of knowledge, which are difficult to study, simply because they happen to lead to material advantages in some cases?

The other point I would like to mention is this. You, my lord, have mentioned the question as to whether or not we should adopt what I think is the bad plan of having separate Technological Universities, or whether we should have our Technological Faculties attached to Universities.

I think it would be a great misfortune if we were to segregate the young men who wish to study Technology, and not allow them to mix with other young men who are studying Arts, Science, Music or Law; and I believe, my lord, it would be bad for the other Faculties. In our own University of Bristol, I am glad to say that the Engineering Faculty has taken a very large share in the social and corporate life of the University. The last three Presidents of the Guild of Undergraduates, who are elected by the whole body of undergraduates, have been members of the Faculty of Engineering, and the establishment of the University Students' Union was mainly the work of one of these Presidents. So that, I believe, advantages result, both to the Technological Faculty and to all the other Faculties of a University, when the Faculty of Technology is maintained as an integral part of the University.

PROFESSOR F. W. BURSTALL, M.Sc. (Birmingham): The point that has particularly struck me with regard to these papers is the fact that they have dealt with the subject from the point of view of the Universities, the point of view of the students, and the point of view of the teachers, but the point of view of the manufacturer and of the workman does not appear to have received much consideration. The real difficulty of Technology to-day, is the fact that it has changed its character. Modern methods mean

the mass production in comparatively large factories of specialized articles. In this work the whole energies of the management staff of the modern works are absorbed in production, and no time is left for invention or development. This is illustrated in my own district, where there are probably ten or twelve works having four to five thousand men each, by the fact that they find it difficult to change their patterns, they cannot make improvements, without a large expenditure of capital and time. And more and more these works are beginning to consider that the true persons to carry out the scientific work are the Universities in their immediate vicinity, and I venture to think that if the Universities are loyal to their own scientific traditions, they will in future occupy in the whole body of our nation a much higher part than they have done hitherto. They will advise, they will improve, they will suggest, and the works will do production and practically nothing more. That this is coming about, of course, is quite clear. The great Universities of the north are all of them taking up this point of view in the strongest possible manner, and if that were the only difficulty in front of technological education in the Universities I think there would be not the slightest fear. Unfortunately, there is another serious difficulty, which perhaps is not purely a technological one, and that is the fact that Science people almost from the beginning have grossly neglected the Humanitarian side. We have made ourselves slaves to that fatal word "efficiency," and we occasionally have talked in the past of a man as if he were built and brought into the world for the purpose of producing articles for other people to waste and destroy. Now we have to remove this, and this is one of the services which I think the University technologists of a high character can render to their country. They are the only people who can approach in a close way the vast mass of trained Labour people. They understand them, they have been brought up amongst them. Some of us have spent our boyhood with them and they have more confidence in the technological teachers than in any others, because they know they are not of the Capitalists' order; and I hope that throughout the Universities of this country some endeavour will be made quite clearly to emphasize the fact that Technology does not, or scientific study does not, prevent our having Humanitarian ideas and not necessarily sacrificing everything to the fetish of efficiency and production.

R. M. WALMSLEY, D.Sc. (London): I speak not only as a member of the Northampton Polytechnic Institute, but as also for sixteen

years a member of the Senate of the University of London; and, therefore, I approach this particular subject from two sides. Some of the speakers regretted that we have not had a paper upon the antagonism between Technology and the Humanities. Other speakers said that between these there is now an open door, but to my mind the wonder is that the door was ever closed because, I would remind you, even in this classic region of Oxford, that the early Universities were Technological Universities. There was one—I am talking now of the early Italian Universities, which preceded Oxford—devoted to Music, which is strictly a technological subject. A second one was a University confined entirely to Law—in that sense Law is a strictly technological subject—and still another to Medicine. Therefore, at the very first, the door was wide open, and then it became closed.

But this is too large a subject to discuss in five minutes. I want just to refer to one or two points, and I ask you to remember that I am not pretending to cover the whole ground. Prof. Watts has said that a technologist, to use a general term, must be a scientific man. No one would question that proposition, but what kind of a scientific man? We hear to-day of pure science and applied science. Will any one in this room draw the line between pure and applied science? It is impossible for it to be done. For sixteen years at the University of London I have been studying the connexion between the Universities and technological work. The University has Technological Degrees in Engineering, Mining, Metallurgy, and in other subjects, especially Medicine. Now, in all these the question of the Honours Degrees becomes an important one. One of the speakers has spoken of the students entering upon a Pass Degree Course or an Honours Degree Course in technological subjects. I venture to think that in London in our Engineering Course we have hit upon the right plan. We have no Honours Degree Courses for the Faculty of Engineering, although we confer First Class and Second Class Honours in the Finals in this Faculty. It was decided at the reconstitution of the University that there should not be Honours Courses in Engineering, and I venture to think that this is the right solution for technological courses generally. We do want the wide basis of a scientific man, and if you begin in the undergraduate course to specialize for Honours Degrees you are sacrificing—I would have the professors in pure science think over this—you are sacrificing for specialization the wide basis which should not only be the basis for high Technology work but, I venture to think, should be the basis for high scientific work as well. We have our troubles in London. We have advocates of pure science. There

again the difficulty is to draw the line. We have our extreme advocates of pure science who insist that even in the Faculty of Engineering the object of the University is to train the students in what they call pure science alone. I would plead for the undergraduates in this direction, not necessarily only in Technology, but take my own subject of Physics, that in teaching the subject you need not sacrifice one iota of the pure scientific training by drawing your illustrations from and colouring your teaching with sections of the subject in which the students are intending to be personally interested later on in life. They will progress better in their study of pure science by being interested, not really in the utilities, but in something with which they are familiar. Physical science, at any rate, is so wide that no teacher of undergraduates can hope to cover all the elementary parts of the subject and he may as well select, if he is teaching engineering, his illustrations from engineering practice without the utilitarian idea obtruding itself to any great extent, as select them from botany, or something else in which Physics is also applied.

The other side has so far prevailed in London that for the Intermediate Examinations in Engineering, the subjects are all under the Faculty of Science and not under the Faculty of Engineering. I am free to confess, without revealing the secrets of the charnel house too much, that I have always been on the side of the Engineers. The professors in Engineering are highly trained scientific men, and they can be trusted to select the Intermediate part of the subject as well as the part for the Finals. That that would lead up naturally to the proper type of man, who can then go on to post-graduate work, I have not the slightest doubt whatever. Before you touch post-graduate work in a highly-specialized subject, or in the highly-specialized branches of engineering, you must lay down this foundation of pure science; but pure science with its knowledge of the steam engine and its knowledge of other things as part of the illustrations which have been used in the applications which have been made.

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THURSDAY, JULY 7.—Morning Session.

CHAIRMAN.

J. C. IRVINE, C.B.E., PH.D., D.SC., F.R.S., VICE-CHANCELLOR AND PRINCIPAL OF THE UNIVERSITY OF ST. ANDREWS.

"The Universities and Training for Commerce, Industry, and Administration."

"The Universities and the Training of School Teachers."

Fifth Session.

Sir Donald MacAlister (Glasgow), as Chairman of the Universities Bureau : The Congress meets this morning under the shadow of a great bereavement. Our distinguished Chairman, Lord Balfour of Burleigh, passed away last night. As I am, perhaps, the member of the Congress who latest saw him—I had a talk with him on Sunday night—I am able to express to you with what keen interest he was looking forward to taking his part in the proceedings to-day ; what pains he had taken to prepare for you an address, which I hope even now will not be lost, on the subject of our discussion ; and how he himself would have deprecated any interruption of the proceedings such as has naturally been suggested from certain quarters this morning. I am not, therefore, going to propose that the Congress should adjourn, although that would be a natural and proper expression of our deep regret. I am going to propose that we should do what Lord Balfour would wish us to do, that is to say, to set our hand to the work which has been put down for us, and to carry it through in his spirit.

I happened to know Lord Balfour in various capacities. As the Chancellor of the oldest Scottish University he naturally came in contact with the whole of University life in Scotland ; as Chairman of the Carnegie Trust for the Universities of Scotland he had a deep and sympathetic interest in their development, and, through the development of the Scottish Universities, in the development of all other Universities.

The Universities of Scotland have sustained a very great loss in losing him, because not only was he wise and kindly and sympathetic, but, by reason of his position in the Commonwealth as a member of the House of Lords and a leader and President of many enquiries connected with education generally, he commanded an influence in this country which was always exerted on behalf of the highest ideals in education. By the Constitution of his University the duty of acting as Chancellor during the vacancy falls upon the Vice-Chancellor, Principal Irvine, who is here ; and I propose that, as a tribute to Lord Balfour and to the University which he represented, we should ask the Acting Chancellor of St. Andrews to take his place as Chairman this morning ; and I would ask leave to close with the proposal :—

> That this Congress of the Universities of the Empire records its sense of deep sorrow for the loss of its Chairman of to-day, the distinguished Chancellor of St. Andrews Univer-

sity, Lord Balfour of Burleigh, and requests that a suitable expression of its regret and sympathy may be conveyed to his family and to his University.

SIR NILRATAN SIRCAR, M.D. (Calcutta): I rise to offer my tribute to the memory of the distinguished worker who has just left this world. We Orientals believe that death is but entrance to a larger life and blessed is the memory of him who in a career of love and service to his countrymen, nay to the whole humanity, breaks down in the midst of such a career. He has left a spirit in this world. Let us all follow him in spirit and even in this Congress we shall realize his presence. I support the proposal of Professor MacAlister with my whole heart.

L. R. FARNELL, D.LITT., Vice-Chancellor of the University of Oxford: I feel I would like to add a few words in supporting this resolution of sorrow and sympathy. I came from a joyous and gay ceremony a quarter of an hour ago, not having had time to discover, knowing nothing about this sad and bitter loss that has fallen upon us: it was not until I reached this building that the stunning news reached me. I cannot, therefore, hope to find any words at all adequate to express what even those of you who had not the privilege of knowing Lord Balfour of Burleigh must be feeling, and what all of us who had the privilege are feeling, most deeply, the sorrow at his really irreparable loss. I had the privilege of coming into contact with him in a work in which he showed not only his great capacity for affairs, but his warm friendship for the University of Oxford; and, as representing that University for the present, and also as connected with his own particular University of St. Andrews, I feel terribly grieved at the news that has just reached us. He was the champion and friend of all the academies in Great Britain. His heart and life were eagerly devoted to their welfare, especially to the academies of Scotland, and especially to his own beloved University of St. Andrews; but also a very warm friend and helper to Oxford in assisting us in our needs. We shall all feel here, as well as elsewhere, that we have lost a dear friend as well as a most distinguished administrator. You are quite right not to adjourn. So many of you have come on this very high ideal thousands of miles, and the work of life, both practical and ideal, must be carried on in spite of the sad losses by which our best men at any moment may drop out. So we will carry on the work, but with sadness and long memory abiding in our minds. I had hoped to have welcomed him to hospitality, and I can do nothing but just pay this very broken tribute to his memory.

NOTES OF AN ADDRESS TO HAVE BEEN DELIVERED AS CHAIRMAN OF THE SESSION BY THE RIGHT HON. THE LORD BALFOUR OF BURLEIGH, K.T., G.C.M.G., G.C.V.O., LL.D., CHANCELLOR OF THE UNIVERSITY OF ST. ANDREWS.

ONE of the marked features of University history in recent years has been the movement to institute Degrees in Commerce, and so to undertake the systematic preparation of men for the control and administration of business.

I think I am not wrong in saying that the leadership in this movement rests with the University of Birmingham, which instituted a Commerce Degree in 1902. Manchester followed in 1904, and Leeds in 1905. Liverpool and Belfast began in 1910, and finally, in 1919, three of the Scottish Universities—St. Andrews, Aberdeen and Edinburgh—and also London have taken the same course.

London, though relatively late to begin, has taken a very prominent part in the movement, and already has the largest number of students working for the Commerce Degree. I believe that they amounted to 250 in the Session which has just ended, while Manchester, Edinburgh and Birmingham each have more than 100. In London the reading for the Degree is, I think, practically concentrated at the School of Economics, and its development has been very greatly assisted, not only by the importance of London as a centre of commerce, but by the very generous donations made by Sir Ernest Cassel for the endowment of professorships and other teaching posts, and from the City Commerce Fund for building and equipment.

These Universities seem to me to fulfil the conditions considered as advisable by the University Grants Committee, who state in their recent report: "If Commerce is to take its place as a fitting subject for inclusion in a University course, it is of first importance that it should be regarded from the broadest standpoint, but it manifestly lays itself open to a narrow and even sordid treatment which it would be improper to encourage in a University Institution. But taught by teachers imbued with the University spirit to students equipped with a substantial preliminary education, it forms an appropriate University course, if it comprises, as it should, some study of Science, History, including Economics and Social Organisation, Geography and Modern Languages."

If I may venture with all humility to state my own personal convictions on this important matter, I should like to say how entirely I agree with and support the policy thus expressed.

Personally, I am convinced that in view of the competition with the highly trained specialists of the United States of America, Germany, France and Japan, intensive training is now more required by the commerce of this country than has been the case in former days, and that in future it will be found necessary in an ever-increasing degree. Our nation is essentially commercial, and it cannot exist upon a past reputation.

This aspect of the subject has been brought somewhat prominently before my attention. Some of you may recollect that I was appointed Chairman of a large Committee which had for its object the consideration of our commercial and industrial policy with special reference to the experience gained before and to some extent during the war. In the course of our enquiry it was represented to us that a reconsideration of our industrial trade organization had become necessary in consequence of the increase in intensity of foreign competition and the lines on which it was conducted. That competition was based largely on a system of combination which had hitherto made little progress in the United Kingdom. It was brought to our notice that both in Germany and in the United States there were communities which pursued a systematic policy in the exploitation of overseas markets, and that in these circumstances our system, which consists chiefly of separate concerns acting independently of, and sometimes in acute competition with, one another, placed us at a considerable disadvantage.

In those two countries which were our principal competitors, and without doubt in a lesser degree elsewhere, industry and trade were being largely controlled by powerful concerns operating on a very large scale, with organization and regulation of production, and restriction of competition amongst themselves both at home and abroad.

One inference which some of us drew from the facts brought before us was that we required to have men prepared for commerce and for industry on broader lines, so that they would have a wider outlook and would take a more extended view of the practical policy necessary than had been the case in the past; and it does not seem to me an unfair inference that training in a University and not in trade only would have the effect of curing at least some of the defects in our commercial organization which were brought to our notice.

Office work is of course a *sine qua non* for training in Commerce, but scientific study of the subject seems to me to be of the first importance and especially so for the Leaders of Industry, because of the broadened outlook such a study inevitably affords. The

lawyer, the doctor, the engineer, the agriculturalist, have been greatly benefited by University study in their several professions. It will surely be no less true in the Department of Commerce.

The really important thing for the Leaders is the directing brain ; if that is wanting no education can supply the defect, but the belief that University training tends to produce mere theorists can be corrected and should be corrected by the combination of academic culture with practical and administrative experience in Commerce, Trade and Industry.

The question of making a culture degree (M.A. or B.Sc. pure) a necessary preliminary to the B.Com. Degree is not unimportant. The financial question is of course a vital one, and I can quite understand that it may not be judicious for every University to institute a Degree in Commerce. One is safe in giving general approval to the recommendation of the University Grants Committee when they say :—

> "Without doubt the primary duty of all University authorities is to establish their existing activities on a sound educational and financial basis before embarking on extensions and developments. Urgent as new developments in certain instances are, the Authorities of the Universities should, in our view, hesitate to launch into new fields of work, while the salaries and the numbers of teachers as well as the equipment in their existing departments are alike inadequate."

But for those Universities which have made up their minds to establish the necessary courses, the procedure of the University of London may, in my humble opinion, be safely commended. I understand that the authorities of that University frankly laid their plans before the most representative gathering of commercial men ; they invited the fullest consideration and criticism ; and they incorporated in their final proposals the various helpful suggestions which they had received from this source. Further, they made it a cardinal principle of their scheme that not only its initiation, but the whole of its future work should have the benefit of the closest possible co-operation with the leading business men.

There may of course be some who think that in training men for Commerce, the Universities are departing from the high ideals and perhaps from their proper functions, and that the teaching at Universities can be of no value unless it is divorced from all practical aims and objects connected with special callings in life. That seems to me to be alike an error in theory and to be contrary to past history. It has never been the case that the Universities have abstained from special education for important callings.

For a very long time they have in the three Faculties of Theology, Medicine and Law trained men directly for the three vocations which have been recognized as the learned professions. Those of us who come from Scotland are familiar with the conditions which make it necessary for graduates in Divinity (B.D.) and graduates in Law (LL.B.) first to take the Degree in Arts. Much must now have been learned by the Universities from a practical acquaintance with the working of the regulations in force, and those acquainted with the facts will probably have something to say as to certain defects and possible improvements in method. But the three professions I have mentioned are not the only occupations which deserve that description. As our life develops in complexity, new types of public service arise and call for the application in new forms of that highest stage of education which we associate with the term University.

Public administration—that is to say, the direct service of the community in the work of national and local government—is one of these. Commerce, which is the indirect but no less real service of the community in making the most effective use of the national powers of brain and muscle and material resources for the production and distribution of wealth, must now as it seems to me take the same rank ; it calls for the highest abilities perfected by training on lines which are at once broad and intensive.

I am certainly inclined to hold the opinion that the man who has to spend his life in commerce, or, for that matter, in industry, will profit as a man and in his calling through the breadth of education and view that can be obtained at a University. That seems to me to be true even if it be admitted—as I think it must be admitted—that it is not at the University that he can be taught the details of his actual business. He will gain, however, by social intercourse and the friendship of those by whom he will be surrounded, and he will acquire the breadth of mind which will enable him better to understand the problems of life, and to acquire the power of applying the principles of liberal culture to the subjects of his every-day occupation. The humanizing life of a University, with its variety of individuals and interests and its broadening influence on the formation of character, must, as it seems to me, be of benefit to all young men standing on the threshold of their careers in life. It cannot avoid being of great advantage in the formation of character. I think it would be difficult to overstate the importance of it and of the influence which comes from the close association in a place of learning of men of widely different interests and destinies.

The institution of Degrees in Commerce, and of the course

leading up to these Degrees, is a recognition of the important place which our commerce ought to take in our national life.

The aim is not to train men for the clerical branches of industry or for its routine work, nor, perhaps I should add, for the technical services of engineering, chemistry, and the like. It may also be that the University education, as such, cannot alone produce what are called " captains of industry." The " captains of industry " are born and not made, or they tend to make themselves. But, at least, the University course in Commerce may aim at training able lieutenants from some of whom the captains of industry may be recruited.

There is therefore, as it seems to me, every reason for great hopefulness as to the movement by the Universities for the recognition of Commerce as a worthy subject for the highest education.

[Lord Balfour of Burleigh's notes for the second part of his Address on the Training of School Teachers were not sufficiently complete for publication.]

THE CHAIRMAN : Ladies and gentlemen, my first duty is to thank you warmly, and from the heart, for the expression of sympathy which you have given to those who are near to Lord Balfour and to a place which was dear to him. Scotland has lost much by his untimely death ; and learning in Scotland, in so far as it is prosecuted in the University of St. Andrews, is poorer to-day through the loss of a man who brought to the administrative affairs of the University a breadth of sympathy and understanding which no words of mine could adequately express. Both personally, and as a representative of the University of St. Andrews, I owe much to Lord Balfour, and it is impossible to escape from the emotions of the moment and make any attempt to fill, however inadequately, the position he would have adorned so well to-day.

As Sir Donald MacAlister has pointed out, it was known that his lordship had devoted much thought and enquiry to the subjects which come under review to-day. With characteristic zeal and thoroughness he had spared no pains to collect reliable information as to the attitude of the Universities towards training for Commerce, Industry and Administration, and his opening address would, I am sure, have been a notable contribution to this important subject. I have no idea of what he intended to say. I can only speak for the labour he devoted to his task, and yet I have the feeling that it would be his wish that the representative

of the University of his adoption should speak in his place within the walls of the University which he loved so well. It has struck me as significant that in this visit to Oxford I should live in the rooms he occupied as an undergraduate in Oriel. I cannot give you his message, and I clearly realize that the problems before us are far removed from the work which has until recently occupied most of my life, and the temptation is great to take refuge behind these explanations and content myself with a purely formal introduction to the papers by specialists; but if the members of Congress are indulgent, perhaps they will allow me to state some purely personal impressions of our work. I grant you freely that the experience of a Vice-Chancellor of a few months' standing can carry but little weight in an assemblage such as this, especially when he comes from a University centre remote from the spheres of Industry and Commerce, and more than fully concerned with its own internal administration; but, in all diffidence, I would submit that one duty of a Chairman, particularly on an occasion such as this, is not so much to range far and wide over the field of discussion as to prepare the minds of his hearers for the experts who follow. A Congress of this nature provides many undoubted advantages, and none who have had the privilege of attending these meetings could fail to return to their home Universities refreshed and inspired by what they have heard at the daily sessions and equally by the social intercourse with fellow workers. Surely it is well to halt from time to time and view our position, asking ourselves the questions, what have we learned and what messages do we carry away? Looking back on the proceedings of the past few days, several factors stand out in my mind in bold relief.

We have discussed the balance of studies and gone away with the feeling of regret that man's time on earth is short, and we think longingly of a practical course which would make possible the complete intellectual development so vividly outlined by the readers of papers. And very much the same feelings have overcome us as we studied the relations of the Universities and Technology, and also towards Adult Education. It could not have escaped notice that the readers of papers contented themselves, for the most part, with stating convincingly their views and ideals, leaving undiscussed any concrete details as to how effect was to be given to their proposals. They were right. It would be folly to plunge into details which could not find application beyond a limited radius. We came here not to carry back cut-and-dried curricula, but to measure and appreciate the forces which are operating around us, to find means to satisfy the highest,

aspirations of our fellow men and to strive to mend a broken world.

What is, I wonder, the general impression left on the minds of those who have listened to the daily speakers ? Is it not briefly this ? Our Universities are at present moved by a great and generous sympathy. The subjects discussed are varied in nature and in scope, but this spirit of understanding runs like a scarlet thread throughout the fabric. No longer does one feel that the exponents of Humanistic and Scientific learning live in hostile camps ; no longer is one inclined to quote the foolish epigram that the Universities exist for the preservation of useless learning, nor do we regard with indifference, if not disdain, the growing demand that all should share the benefits of a real and catholic expansion of learning. The position was clearly defined yesterday by the Chancellor of Bristol, and no one could listen without emotion to the words which fell from the Vice-Chancellor of Leeds. In listening to them, one felt that the Universities were being called to place a finger on the pulse of a restless suffering humanity, to diagnose the ills, and try to play the part of the Great Physician. In conversation yesterday with a colleague he said he had been impressed with the idea that the Universities should in the future fulfil a function similar to that of the Church and extend the benefits they can bestow on all classes, in all conditions of life and in response to every real longing of the human soul. If this be so, then, like the Church, the Universities must go to the people. It is a world ideal, and notice, such a feeling of human sympathy is not forced upon us by the exigencies of the moment, but has arisen naturally and spontaneously. Now the stream has grown into a flood. We are asked to include within the sphere of University activity subjects which find application in daily life, not so much for the material reward they may bring as for the intellectual awakening of the nation. We are asked also to extend our teaching to the extra-mural student, not because he otherwise might prove to be an uncomfortable and devastating critic, but because he is expressing a longing which a kinder fortune has enabled us to satisfy.

In a word, I am deeply conscious of the call to the Universities to envelope themselves in this spirit of sympathy which may worthily be called the love of mankind. And there is another lesson which must have reached all ears. It is a message of caution. We have been warned against the unnecessary competition, the unseemly rivalry between Universities ; we have been urged not to expand beyond the limitations imposed upon us by our individual environment or even by our traditions. We

cannot all become centres of Technological or Social study, and those who are debarred from such activities will take away a new appreciation of the spirit in which these studies are pursued, just as those who promote such studies will be stimulated by the support of the sister Universities.

It is in this spirit, ladies and gentlemen, I ask you to direct your attention to the topics of this morning. It is, I verily believe, what would have been laid before you by the one who otherwise would have occupied this place. I have made no attempt to deal specifically with the new development which calls us to take part in University training in Commerce, Industry and Administration. It is sufficient perhaps to say that we welcome the further opportunities thus presented to diffuse our ideals. It is in no selfish spirit we approach the task, and it is without thought of the benefits, material or otherwise, which the Universities themselves may reap in training leaders of Industry and those who become responsible for the affairs of our wide Empire.

I feel I am expressing your views, and certainly those of the man who would have stood here to-day, in saying that we leave aside all thought of gain or reward, and think only that here are new paths down which will travel our messengers, who will carry into every phase of national activity and into the remote corners of the earth this spirit of sympathy, of understanding and of mutual goodwill; this common striving after a great ideal which is the dominant feature of the Universities of to-day. It is in that spirit I beg you then to turn your attention to the discussion of the specific subjects before us, the Universities and training for Commerce, Industry and Administration.

THE UNIVERSITIES AND TRAINING FOR COMMERCE.

First Paper.

I DO not know whether I am expected to set forth the reasons why Universities may be rightly expected definitely to seek to prepare such of their students as may desire it for commercial life; or whether I can take that for granted and lay before you some ideas as to the nature of that preparation. Engaged as I have been in propaganda, off and on, for twenty years, I should be glad to believe that the needs and possibilities of higher commercial education are now sufficiently recognized to allow me to turn to a more immediately pressing duty. Now that London—with a pleasing air of unconsciousness that it is not absolutely first in the field—has set up a well-endowed Faculty of Commerce; and an ancient seat of learning, like Edinburgh, has added commercial studies to its traditional range of interests; the cause is no longer left in the hands of the "new" provincial Universities. I suppose, in the course of the next twenty years, we shall see Faculties of Commerce, or something like them, in every considerable University in the Empire.

With the introduction of commercial studies—as earlier with the introduction of engineering and applied physical science—the theory that the proper task of the University is to prepare its students for everything in general and nothing in particular, will even more completely lose its hold on academic minds. The conception of a general mental culture, entirely divorced from all sordid considerations of subsequent occupation, as the only goal of University teaching, has of course, characterised only a very brief episode in academic history. Looking at University history in the large, a University must be described as primarily the home of professional education. During the greater part of its history, its task was to educate men for the only profession then requiring education: that is to say for the ecclesiastical profession and for schoolmastering as an appendage to it. In a far lesser degree, and chiefly in certain special centres, did it educate men for the practice of the law and, in more recent generations, for medicine. As to the ecclesiastical profession (with all that that carried with it, under the conditions of the time), we have but to reflect on the place in the civilization of the Middle Ages of the University of Paris: whose history forms the first and still, I suppose, for the development of the human mind, the most important chapter in

University annals. When we pass to post-Reformation times, we see the founders of the earliest American University had the same object. We desired—said they—" to advance Learning and perpetuate it to Posterity ; dreading to leave an illiterate Ministry to the Churches, when our present Ministers shall lie in the Dust." Of the Scottish Universities, in times much nearer our own, we are told that " except for the Church demands, the attendance at the Arts classes would, throughout most of the nineteenth century, have been so meagre as hardly to have justified their continuance." It may be doubted whether general mental culture was ever maintained to be the prime *raison d'être* of a University until Oxford and Cambridge, some sixty or seventy years ago, began to acquire a body of resident lay tutors. In encouraging what we may even call " vocational " studies, the modern University is but reverting to its own age-long traditions.

But though this is so, I want to say, with equal emphasis, that the idea which was at the back of the general culture doctrine is one in my judgment of permanent and fundamental value. That idea, freed from the narrow and temporary forms in which it clothed itself, was this : that the education which alone deserves the name of a University education, is one which aims at training the judgment, not the memory or technical aptitudes : that, to be worthy of its place in a University curriculum, a subject must be capable of reduction to principles or grouping in generalizations —principles and generalizations illuminated by analysis and bound together by ties of causation. I do not, indeed, think of the University merely as an organization for formal instruction. I am very conscious that at least of equal value are the associations and the generous and spontaneous intellectual interests of student life ; and one reason why I have been eager to introduce commercial studies is because I believe that thus alone can we attract to the University, and bring within the range of its intangible influences, any large number of business men's sons. But, nevertheless, the character of the formal instruction there offered does immensely matter. And it seems to me that the task now before the Universities is just this : to realize that subjects of instruction in themselves directly and obviously appropriate to a future business career are capable of being handled in two very different ways : in a way which burdens the memory with unconnected facts and rules, and in a way which exercises the reasoning faculty and becomes the vehicle of a real education. I have never been ashamed to be frankly and nakedly utilitarian in the curriculum I have recommended. Instead of aiming only at mental culture, and trusting that somehow utility will emerge as a by-product,

we are completely justified, I have held, in aiming directly at utility, and seeking, in and through such studies, for the mental discipline and mental enlargement which we all desire. But all this is only on the assumption that the utility is rightly conceived, or—what comes to the same thing—that the subjects are taught in the right way.

I proceed, therefore, to consider the constituents of a University commercial course. But let me first define the precise circumstances I have in view.

About a Graduate (or, as some less correctly call it, a Post-graduate) course, I shall say nothing. A University like Harvard, whose chief difficulty is to cope with the superabundance of students who already frequent it, may perhaps with success establish a Graduate School of Business Administration. Students who come from well-to-do business families, which send their sons to the University from reasons of sentiment and tradition, may have time to devote their undergraduate years to the pleasures appropriate to their youth and social position, or to philosophical, literary or scientific studies for the pure love of them ; and still be so little in a hurry that they can spend a year or two in a Graduate School, and there begin for the first time to think seriously of their future avocations. For such men the appropriate curriculum must depend on what they have previously been reading. But " of them we do not reason." The essential mission of the typical modern University—like those of the English " provinces " and the British Dominions—is not to those who already come, and, in any case, we may say, will continue to come to its class-rooms. Nor is it to those who are going to be economists or teachers or journalists or civil servants. The mission of the University to-day is to put, somehow, the University idea into the heads of that great majority of the commercial community which at present does not send its sons to the University at all, and will only send them if it can expect to receive most of them back again into commercial life. We shall do an immense service to the country if we can succeed in inducing them to send their sons to the University instead of taking them straight from school into the works or counting-house. The three years from, say, seventeen and a half to twenty and a half is what we must ask from them. It looks a meagre enough time allowance. It would be so pleasant for them, and for us teachers, if they would postpone their coming for a year, and then, after getting their first degree, stay on for a year or so longer. But to ask that is not—speaking broadly—practical politics. If we ask so much, they will not come at all.

Our demands upon parents and students should thus be

moderate. But as large as this they should be. Below the three years' ordinary undergraduate course, entered upon after a matriculation examination of the same standard as the other Faculties require, the University, in my judgment, ought not to go. For instance, I think, *at the present stage*, it is a mistake in most cases for a University to give its degrees as the result of attendance at evening classes, after the bread-earning work of the student's day is over. To argue the matter would take me too far afield. It is equally inexpedient to grant commercial diplomas to unmatriculated day students for a course shorter than that necessary for a degree, even if they can attend lectures during the day time. Of course, men and women should be welcome to particular classes without matriculating, if they appear capable of benefiting from them ; and they may be given a bare certificate recording the particular subjects in which they have satisfied the examiner. But beyond this I am sure it is not in most cases safe for the Universities to go, at the present stage. The University can undertake secondary duties only when it has accomplished its primary one ; and to begin with a preponderating number of evening or diploma students is pretty sure to check the advent of undergraduates of the usual type. It is fatal to create the impression that the University regards its commercial faculty or department as a sort of inferior side-show. And as to matriculation, it is of the utmost importance for the general intellectual life of the nation that we should do all in our power to spread the idea that the normal thing for a reasonably intelligent and well-taught boy of the commercial classes is that he should reach, on leaving the secondary school, a standard which will qualify him for matriculating at a University, if he so desires. Of the working classes and " the educational ladder," I cannot now speak.

Let me go on to say that there is no adequate reason—for a boy who is going on to a University—why the school education should be specialized in a commercial direction beyond what is already provided in the modern secondary school. For boys who will go on to a University Faculty of Commerce, I don't in the least believe in industrial history or commercial geography or commercial French or commercial arithmetic and book-keeping *as a substitute for* ordinary history or geography or French or mathematics. Of course good teachers and good text-books will always try to enliven the instruction by introducing suitable references to the economic aspects of geography and other subjects. But, in the main, it is not brand-new subjects we want in the secondary schools, but the present subjects taught sensibly by masters paid well enough to be competent.

We now come to the subjects to be studied within the University by those looking forward to business careers. Quite half the work must, I think, in a broad sense of the term, be "economic." And let us at once quite frankly state the situation. The wide range of economic teaching desirable in a commercial Faculty is only beginning to be mapped out. And there are two opposite and very different dangers. One, fortunately, is disappearing: it is that we should be satisfied with putting into our curriculum the very abstract sort of economics which used, not long ago in some places, to be the only economics taught; and leaving it there, suspended in mid air, with little visible relation to actual business life. I will not take you back to the controversies of thirty or forty years' ago concerning "economic method." I still think the controversy was salutary; and I am not a bit repentant of my own small share in it. But the controversy is not so necessary now. Most economists who are now called upon to teach in commercial faculties recognize that the teaching must be largely concrete, descriptive, statistical, historical; that it must come to close quarters with the actual structure of the existing economic organization and all the large forces visibly at work; and that if a teacher, trying to set these forth, fails to select and generalize, the fault is not in the purpose, but in the teacher. There has, in recent years, been a very encouraging growth in the number of books on concrete economics which one can put into the hands of students, several of them the result of the creation of commercial faculties or of economic departments serving more or less the same ends: it would be invidious to single out particular examples. Yet I cannot refrain from pointing to Dr. Alfred Marshall's *Industry and Trade*, which appeared in 1919, as a masterly and informing survey of a large part of the field. Matters as to which some of us had been trying for years to dig out some scrappy material, and which we had been presenting to our classes with a feeling that we were cultivating quite untilled tracts, were there brought together for the first time in a general view. The motto of the book, "The many in the one, the one in the many," presents our common ideal: the reconciliation of the abstract and the concrete; a reconciliation, let me add, of which each side is equally in need.

Marshall's book, like some other recent works, illustrates this farther point: that for the education of future business men it is necessary for the teacher to put himself not only at the national or social or public or political point of view, but also at the point of view of business success, of efficiency, of profit-making. Young men (I speak of the generality) can only carry alert minds through

the dull years of subordination which commonly follow the taking of their degree, if they have been helped to realize that business is interesting: that to men of intelligence it presents a series of problems, to which the University cannot indeed give them a golden key, but which it can accustom them to put before themselves and analyse.

And if the teaching of the University is thus conceived, it matters little what it is called—Economics or Commerce; or how it is divided up into particular courses. I would only remark that, in the actual planning of courses, some regard must surely be paid to the character of the area which the University chiefly serves. A financial and merchandising centre will have somewhat different needs from a manufacturing one; a manufacturing from an agricultural; and even an engineering from a textile or chemical. I must avow my opinion that there is still too much tendency to lecture about banking and the money market and currency, simply because they are conventionally economic subjects, and there are available text-books. It seems rather a pity when students in the midst of an agricultural region, from which they come and to which many of them return, know something about the *gold point* (enough, that is, to write about it), and nothing about *farming costs*. I would add that I should like to see everywhere a very simple course on statistical method, illustrated from our own official returns and from business experience. Long before any mathematics are reached beyond simple arithmetic, there are lessons to be taught as to the meaning and dangers of averages, the nature of statistical evidence, the use and abuse of published figures, which are singularly illuminating to most students, as well as of definite use in after life in determining upon a business policy.

The chief danger just now is not from the over-abstract, but from the over-practical. There is a good deal of "commercial" teaching in municipal commercial schools and evening institutes, which is intended for clerks. I say nothing of its appropriateness for them, though I have my doubts. But it is very evident, if we may judge from the text-books used, that much of the instruction is directed only to the memory, and that it contains a mass of detail about current office practice—detail, most of which an observant graduate would pick up in a few days in an office, and some of which will probably never come his way at all. The temptation to the University is so great, to put down an attractive title for a course—*e.g.*, Commercial Practice or Business Organization, and appoint a teacher who has had some "business experience," that I feel bound to utter a warning cry. The danger is not lessened when the Professor of Economics is disinclined to

come down from his abstract heights, and frees himself from personal responsibility by getting a colleague appointed, at a lower salary, to take this " technical " task off his hands. I found some years ago an arrangement of that kind, beautiful on paper, at Leipzig. Of course the results were unsatisfactory. It has not been unknown nearer home.

The best way of meeting this danger is to select that semi-technical subject which can be taught with an appeal to the reasoning faculty throughout, and which can be brought into touch with the " economic " courses proper, and to give it a conspicuous and serious place in the programme. Of course I mean Accounting: not " Accountancy," unless the University intends to prepare Accountants for their professional examinations: but " Accounting "—that understanding of the *rationale* of accounts which all business men ought to possess. Accounting—especially its early stage commonly known as Book-keeping—can be taught in a mechanical and unintelligent way. That is the fault, I am told, of much of the Book-keeping taught in schools. And it will be the fault of the Accounting taught in the University, if it is thought that any Chartered or Incorporated Associate, however ill-paid, and with whatever humble status outside the Senate, is good enough to undertake it. On the other hand, properly taught it is provocative of thought throughout. And it has two particular merits. It enables the student to approach, from another and to some men a more congenial point of view, questions, such as those of Reserves and Depreciation or those of Costing and Overhead Charges, which he has also been looking at from the points of view of social consequence or business expediency in his Economics or Commerce lectures. And Accounting is a subject in which the student's progress is very definitely measurable; and of which the purpose is more apparent to the business world than is the case with courses in Economics. Nothing is more cheering to the Dean of a Faculty of Commerce than to find the distinguished accountant who is kindly serving as external examiner giving, quite independently, high praise to the advanced accounting paper of a student who is also getting good marks for his " purely economic " papers. It is instructive also to the distinguished accountant!

Commercial Law is another subject that usually and naturally finds a place in a commercial curriculum. Here again, the subject, properly taught, appeals to a student's sense of reasonableness: he can appreciate the needs which have led to the several enactments and decisions, and the nature of the contingencies for which the law must provide. And here, also, is a subject which can be

linked on—if not formally, in effect—to the main commercial courses. Thus, while in the economic lectures the student is led to consider the social or business results of limited liability, the relative merits of different policies as to capitalization, the economies of business combination and concentration, and the like, in the Commercial Law course he learns the legal requirements of the particular plan determined upon, and the legal responsibilities involved. And by the side of lectures on "commercial" law in the usual sense of the epithet, there should be lectures on the branch of law of growing magnitude which may conveniently be called "industrial." It is most desirable that the future business man should realize how large a part of the relations between employers and employed is affected, in a very precise way, by legislation. This is a matter in which the educational interests of the future business man and of the citizen are identical. The one has to comply with existing legal requirements as a part of ordinary business routine; the other (of course, largely the same person in another capacity) has a share in determining by his vote how these requirements shall be modified or extended.

Now let us pass to Modern Languages. Modern languages have sometimes been worshipped as fetishes. Teach modern languages, it has been implied, and all will be well with British trade on the one side and with our Schools and Universities on the other. And the teaching recommended has often been conceived of so narrowly as to defeat its own object. It is not mere ability to write business letters in other languages or to prepare polyglot catalogues that is chiefly wanted, though that has its use; but general business intelligence and an appreciation of foreign conditions and opportunities. It should, moreover, be borne in mind that, unless a boy when he comes to the University has a family concern or some other definite opening in view, he can't be sure that the language he selects is going to be made use of by him for commercial purposes. For these and other reasons which I must pass over, the commercial study of a language at the University should be of a wide scope, and it should be preceded by linguistic and literary study. The commercial study itself should include not only commercial correspondence, which is no very troublesome matter to a student who comes to it well prepared, but also the reading of typical examples of economic and commercial and financial prose. To take French as an example: what a business man wants is not only to be able to read and even to write, if necessary, a letter in French, but also to be able to follow the movement of French industry and trade. He ought to be able to read *Le Monde Economique* as easily as the *Economist*,

M. Raffalovich as readily as Mr. Hartley Withers, M. D'Avenel as freely as Mr. Clapham, M. Gide as quickly as Dr. Shadwell. But before he comes to that, I would have him, in the earlier years of his course, and after he has mastered the rudiments, read a little of the best literature of the country. A man who has read some Molière or some Cervantes or some Dante appreciatively, has gone some way to understanding Frenchmen or Spaniards or Italians—not a negligible acquirement even from a commercial point of view. And if he never has to do business with the nation, he has had one opportunity, at any rate, in his life to develop his imagination and enlarge his sympathies.

There is, however, another requirement of commercial education in the University which is not so generally recognized. My own experience in an English manufacturing centre has been that there is more felt need for, and more readiness to welcome, well-trained men in big manufacturing concerns than in merchant houses; and I am inclined to think that, with the steady and inevitable "trustification" of a large part of modern industry and the consequent growing indisposition to rely on nepotism to supply its managers, that need will increase. It is, therefore, for many students desirable that they should acquire, as part of their University education, a general knowledge of manufacturing processes. Sometimes they will already know what business they are going into: and in any case the surrounding province will probably be marked by particular types of industry likely to furnish occupation to many of them. It is well, therefore, to allow in the curriculum an option between, at any rate, a second foreign language and pure or applied science. In a metal-working and engineering district, for example, a young business man, without professing to be a metallurgist or engineer, may, sensibly enough, desire to learn the nature of the fundamental processes for extracting and shaping metals, to get some notion of the chief forms of engines and other machinery, and to be able to read a blue print. *Mutatis mutandis* the same can be said of the textile or chemical or any other large group of trades. I will not conceal the practical difficulties. To provide this instruction, we in Faculties of Commerce must turn to our colleagues in Pure or Applied Science: and these departments are usually so busy turning out technical experts, and their own standards are so high, that until we are strong enough in the number of our commercial students to push the doors wide open, we have to be content to let our men wriggle in by narrow apertures and receive a somewhat absent-minded welcome. Still, we are bound to keep on asking for more. And perhaps our technological colleagues will be more open-armed when they come to realize that

the Faculty of Commerce has something valuable in its turn to offer to future technicians. But that is another story.

And now I would like to add a word as to methods of instruction. We in the newer Universities—and I suppose this is true also of the Dominions—must do the great bulk of our work by set lectures. With the numbers of our students we cannot do otherwise. And I feel now, as I felt when I left Oxford thirty-three years ago, that the tutorial system, as I then knew it, made demands which were too heavy upon the teachers, and that while it provided for the transmission of knowledge, it hindered its advancement. Nevertheless the method, then prevalent in the Greats and History Schools in Oxford, of systematic weekly essays, prepared by the student and criticised by the tutor in respect both of form and contents, did serve a purpose which lectures did not. And in our new Faculties of Commerce we must do what we can to combine both methods. If only for his own future success, the commerce student needs to be taught to generalize for himself and to select from the mass of particulars the essential elements; and then to set forth the main lines of the situation or problem in a lucid fashion. Here again utility and real education require the same thing. A method of Conferences, with assistance in the preparation and shaping of the papers to be presented, will, I have found, do a great deal toward the end in view, without the extravagant and for us impossible expenditure of effort involved in continuous individual tuition.

It is time that I brought this paper to an end. My attitude will, I hope, be sufficiently clear. There is a distinction currently drawn between "humane" or "humanistic" and "technical" or "utilitarian" or "bread-and-butter" studies. If I were to sum up the fitting purpose of a University in educating men for business life, it would be in some such phrase as this: *the humanistic spirit applied to utilitarian studies.* And for this "humane" spirit there is abundant need. Let any one, for instance, take the trouble to look at the business literature just now so conspicuous in the booksellers' shops in great industrial cities, and he will see that it proceeds either from accountants or from engineers. It is they who are attracting the attention of the younger generation of manufacturers. Now, no one can feel more respect than I do for a competent accountant or engineer. But each is only too likely to have the defects of his qualities, unless his own education has been liberalizing. Let me illustrate from "Scientific Management." The late Mr. Frederick Taylor was a man of remarkable originality and force of character. He was profoundly right in his contention that manual labour is often extravagantly wasted and ill-directed.

But being an engineer he looked on the labourer as a machine: brain and muscles were for him so many engine parts; and he habitually thought and spoke of the life-work of human beings in the terms of mechanics. Men above the level of the ox (his own famous example) were bound to resent this attitude. It was not good intentions that were wanting on his part, but knowledge of human nature. In consequence "Scientific Management" has met with inevitable suspicion and opposition in America; and it will meet with the like here, if it is undertaken in the same narrow engineer spirit—the spirit that thinks that any formula, whether of Task or Bonus, will dispense with tactful and sympathetic human intercourse. And so, even for its own purpose, commercial education in our Universities must never be technical in the sense of the technician: it must be humane also, and aim at the understanding of men. And the fulfilment of this, its own, purpose is also the fulfilment of a social function.

WM. ASHLEY.

THE UNIVERSITIES AND TRAINING FOR ADMINISTRATION.

Second Paper.

How to fill the Civil Services overseas.

The system of administration prevalent in India and the Crown Colonies requires a very high standard of character and efficiency in the superior Civil Service. The central principle of that system is that Englishmen should be employed only in the most important posts, that they should, therefore, be few in number and that the greater part of the work of administration should be carried out through the agency of indigenous subordinates. The duty of the Englishman is, therefore, to control a native staff, inspire them with his own standards of honour and public duty, to gain the confidence of the population entrusted to his charge, and to be ever on the alert to improve the administration and develop the district or province of which he is the head. These are hard tasks, and very few men are capable of satisfying the exacting standard which they imply; experience has shown that the men who come nearest to satisfying it have usually been trained in the older Universities of Oxford and Cambridge. For a civil servant the intellectual discipline of a University education is essential. He must have a well-stored mind and a broad outlook. He will constantly have to deal with questions of policy, with principles of administration and of economic development, which can be handled adequately only by a well-educated man. In addition to his intellectual equipment the civilian must have the faculty of dealing with men and the gift of leadership; in occasional crises of his career he may need the nerve of a tried soldier, but even for his day to day work he should possess the qualities which inspire confidence, respect and even personal devotion. Without these he will not be successful in administering either a district or a province. Character cannot be tested by examination or by any methods of investigation available to the Civil Service Commission; for the most part we have to trust that it is part of the inheritance of every Englishman, but in so far as it is possible to make some provision for securing it, I am satisfied that experience shows that character is fostered and developed by life in a residential University. This is why Oxford and Cambridge have proved such admirable nurseries for the Civil Services of India

and the Colonies. Their schools give the intellectual discipline, and the training of character is a by-product of superlative value.

The problem with which this country is now faced is how to obtain men of the type required in numbers sufficient to satisfy the demands of the public services overseas. Even before the war the supply was not equal to the demand. The different services in the Indian Government were competing with one another, and the less attractive services failed to get the quality which they needed. The Colonial services, for obvious reasons, fared even worse. The war has enormously increased the difficulty of manning the Empire. All the Civil Services overseas suspended recruiting during the war, and their cadres are probably still below strength. The young fellows who should have filled them hurried to the front at the earliest opportunity, and every one of us knows from personal loss how large a percentage never came back. But if the supply of suitable candidates has been diminished, the number of posts to be filled has considerably increased. The Empire has taken on new responsibilities, the extent of which no one is yet in a position to estimate accurately, but there can be no doubt that in Asia and Africa more English administrators will be needed than before the war. From one quarter only will there be a reduction in the demand. A considerable number of posts in the Indian services will in future be filled by Indians. That, in my opinion, is entirely to the good; it is a change in administrative policy which even before the war was overdue; now it would be as unwise as impracticable to resist it. But the reduction in India's demand is counterbalanced by the demand upon our manhood which has sprung up on the other side of the Indian Ocean. Almost unnoticed by the general public we have acquired a great East African Empire. From the Sudan in the north to the River Zambezi in the south, we have assumed responsibility for the administration of a vast extent of territory. Our East African Empire now covers about 2,000,000 square miles, and contains a population of approximately 16,000,000 souls. In area it is actually greater than the whole Indian Empire, though the population is at present very much smaller. But under British administration the empty spaces will become populous. Tribal wars will be prevented, insect-borne diseases will be eradicated; new and better crops will supply the people with an ampler diet. The bush and plain over which zebra and buck now wander unmolested will carry a large population. For as long a period as it is profitable to look forward the people in these lands will need an ever-increasing number of

Englishmen in their Civil Service, and these Englishmen will do for them all that the servants of the East India Company and the I.C.S. did for India in the first seventy or eighty years of the nineteenth century. Just at the moment when the Englishmen in the I.C.S. have brought the great part of their work to a triumphant conclusion, and are preparing to hand over their charge to Indian colleagues, a demand arises for just the same type of Englishman to do in the next centuries the same class of work in Africa.

Where are the new men to come from ? Oxford and Cambridge will, I hope, continue to supply a goodly number of them. But it is not desirable, and it is clearly impossible, for the two older Universities to provide recruits for all the Civil Services of the Empire. A very large number will have to come from the newer Universities. I am satisfied that these Universities will be able to supply the Empire with Civil Servants as good as those who manned it in the past upon condition that they make good one deficiency. The modern Universities are deficient in the provision of those opportunities for a full social life in which the older Universities are so rich. The new Universities were founded for the most part in large centres of population ; it was assumed that the students would live at home and attend College during a few working hours for instruction in the arts and sciences. The Universities have fulfilled the duties assigned to them. They have on their staffs professors and lecturers who are eminent for learning ; their classrooms and laboratories are every day filled by large and increasing numbers of attentive students. If University education consisted only in imparting knowledge, and if we appraised Colleges only by the way in which they discharged their formal and official functions, we should say that the modern Universities had been a success. But we all know that this is not the whole matter. A University must be judged by the way in which it gives opportunities to its undergraduates for the full development of all their faculties, social and physical, as well as intellectual. What is lacking to students in our modern Universities is more facilities for sports and athletics, more time for their clubs and societies, ampler opportunity for meeting and talking to one another, away from the dons and the lecture rooms. The time in which they can be together by themselves is far too short. They can meet and talk only in the odds and ends of time of a six or seven-hours day. Just when the talk is at the best, when the club is liveliest, they must hurry off to catch a train, etc., to be present at the family meal. They must perforce pass many hours of every day outside the University atmosphere. I think that

all of us who are working in Universities of the modern type feel that our most urgent need is to provide our undergraduates with greater opportunities for their social life. We need to build halls of residence on the outskirts of the city, in close proximity to the playing fields, so that, though our students may have to come into the town for lectures and laboratories, they may, as soon as their academic work is done, get back again into the open, sleep and play in good clean air, and have ample time after hall for clubs, societies and debates. My own view is that their residential halls should be fairly close together in a University park, so that they may have frequent opportunities of meeting all the diverse elements which make up undergraduate society. For, as Newman long ago observed, it is this contact with others which enlarges the mind. "The pupils or students," he goes on to say, "come from very different places and with widely different notions, and there is much to generalize, much to adjust, much to eliminate; there are inter-relations to be defined, and conventional rules to be established in the process, by which the whole assemblage is moulded together and gains one tone or character. . . . I am not dreaming of anything especially exalted as animating that youthful community; but still they will constitute a whole, they will embody a specific idea, they will represent a doctrine, they will administer a code of conduct, and they will furnish principles of thought and action. They will give birth to a living teaching, which in course of time will take the shape of a self-perpetuating tradition, or a *genius loci*, as it is sometimes called, which haunts the home where it has been born, and which imbues and forms, more or less and one by one, every individual who is successively brought under its shadow."

Our modern Universities cannot afford to neglect so potent a force in education; there is indeed a special reason why they should pay particular attention to it. They have recently begun to tap new strata of society which were previously untouched by higher education. A considerable proportion of their undergraduates now come from working-class homes. I have a number of them in my own College, and many of them are splendid fellows. I have come across first-class ability, energy of character, and earnestness of purpose in the sons of miners and mechanics, and I am satisfied that our Universities will in future draw a great deal of first-rate material from the ranks of Labour. But these men need far more than the boys from Public Schools the advantages of a residential University. Their physical development has, in some cases, been retarded; therefore they need plenty of fresh air and athletics; they have come from rather narrow homes

where books are rare; therefore they need to rub shoulders and exchange views with other men; they have "much to adjust and much to eliminate," as Newman says. But they respond magnificently to the stimulus of corporate life, and if our provincial Universities will supply them with opportunities for all-round development, they will provide the Empire with an abundance of first-class Civil Servants.

THEODORE MORISON.

Discussion.

SIR THEODORE MORISON, M.A. (Durham, Newcastle Division): Mr. Vice-Chancellor, I want, with your permission, to make a proposal with regard to procedure. I think there have been too many papers and too little discussion. We are not getting the full value out of this Congress unless we can exchange experience. I ask, therefore, your permission to accept my paper as read and let me begin a discussion on this subject. I have Sir William Ashley's permission to be aggressive and provocative.

I suppose that there are in a great many Universities Faculties of Commerce, and what I want to know is, what do you, in practice, think of them? I myself think very little of the Faculty of Commerce. It seems to be a bit of eye-wash. I don't think there is much value in it. I agree entirely with what Sir William Ashley has said in his paper, that Universities should not be afraid of teaching subjects which have a vocational value; in the modern Universities we have all accepted that position. What I do dispute with regard to commerce, as it is taught in most places, is that it does really broaden the mind, does really give a University education at all. I am ashamed to say that I don't know the syllabus of the Birmingham University, but I have looked at other syllabuses and they seem to me to be a collection of snippets from which a student cannot generalize, from which he gets no real philosophy; and if it is nothing more than that, if it is only a collection of fragments of useful information, it is not a University education at all. Faculties of Commerce have still got to justify themselves, and I want to know whether the experience of other Universities is such as to throw some doubt, some suspicion, upon the wisdom of establishing these Faculties. May I give one small illustration? A very able student in my University, who had been through the Course in Commerce and had taken a very good Degree, said that he did not think he got any good out of it, and he was now going to study some subject of older academic standing because he "wanted something to get his teeth into." I think it would be most useful for us if we had contributions from various speakers saying whether they found in practice that Commerce is a genuine University subject.

PROFESSOR PRAMATHANATH BANERJEA, D.Sc. (Calcutta): I have been called upon, without a moment's notice, to continue the discussion on such an important subject, and I have been asked to dilate upon the experiences of my own University. The Calcutta

University has not at present a separate Faculty of Commerce. We have a Faculty of Economics, and Commerce, of course, is a part of the general science of Economics, but it takes a comparatively subordinate place in the scheme of social studies. We propose, however, before long to give to Industry, Commerce, and Administration the prominent place which their importance demands. But Sir Theodore Morison has raised the fundamental question, " Is Commerce a subject which ought to find an important place in the curricula of a University ? " In my view, Economics, Commerce and Administration—indeed, all social subjects—ought to be studied in the spirit of philosophy and not merely in a scientific spirit, and, as such, these are fit subjects for inclusion in University curricula. Commerce has long enjoyed an evil repute. A poet—one of the greatest of English poets—once said that no virtue could flourish where there was trade. I don't know whether that is true, but if trade means an exchange of useful things, it ought to be beneficial to society. Exchange of useful things does not necessarily imply exchange of material goods, but even material goods do often—though not always—contribute to the higher well-being of man. However, if these subjects are studied in the spirit of philosophy, as well as in the scientific spirit, I think we will gain much by their inclusion in the curricula of a University, for a University is a great thought-organization, and, as such, its business is to make a synthesis of all the different departments of study.

PROFESSOR E. R. DEWSNUP, M.A. (Liverpool) : I did not expect to be called upon at this time, but in view of Sir Theodore Morison's severe criticism, it may be of advantage in this discussion to put forward the view of one of those people who seem to be regarded by some as charlatans of modern University teaching. But if those of us who profess Commerce in the Universities of the world are charlatans, we are, at any rate, unconscious of our quackery, for we certainly believe in the genuineness, may I even say in the value, of our work.

In academic, as in business matters, the test of experience is an important method of evaluation. It consoles me, therefore, to remember that in America, some twenty years ago, many University teachers, and most leaders of business, were quite as severe in their criticism of the proposals for the University training of business men as Sir Theodore Morison has been this morning. Yet to-day, a number of the foremost Universities of America, are thronged with students clamouring for such training—the University with which I had the honour until recently of being

associated has, for instance, over 1,700 students pursuing a four years' course in Commerce and Business Administration—and manufacturing and mercantile establishments demand with eagerness the services of their graduates. In view of the change of sentiment across the Atlantic, it is rather suprising to me—I could almost say appalling—to find held at home much the same ideas as were current close upon twenty years ago when I left England. To what extent, I wonder, is the challenge of this morning based upon the undeveloped methods that characterized higher commercial education of the pre-adolescent stage; to what extent is it, unconsciously, a criticism of concepts and ideas of twenty years ago rather than of those of the present day? Yet even that long time ago, the opening speaker of this Session, Sir William Ashley, was clearly pointing to a type of training in Commerce that would fully meet the qualitative standards of University education.

Despite the misgivings of the conservatives, we are really not very unreasonable in claiming that the type of training now offered to the University student who desires a business career is very much akin in spirit to that offered in the older-established subjects, while at the same time it is better adapted in content. I admit, of course, that the pedagogical methods of the older schools of study have had the advantage of long experience, and some of this advantage attaches (in less degree) to such younger schools as those of Economics and Geography; but experience teaches; and I think that, with the passing years, we are understanding our problems better and that, consequently, the methods now followed promise a high degree of success.

Those of us who are responsible for the administration of University courses in Commerce, have not in mind the teaching of business in any narrow sense of the word, as is apt to be assumed by the man in the street. What we are endeavouring to do is to provide for the young men who come (or should come) to the Universities on their way to a business career a training along lines that will command their interest and attention, but which will, at the same time, not fail to provide them with an intellectual discipline of a high type. In the case of most of these men, the necessary concentration of purpose and devotion of spirit are not readily elicited by an appeal through the customary courses, but a correlated scheme of studies that, upon a background of economic, geographical and historical factors, sets out the complicated organization of commerce and industry so as to reveal those causal relationships to which Sir William Ashley has referred, stimulates the imagination of the men and gives a lively vigour

to their mental processes. Thus pursued, the study of the phenomena of business provides an intellectual *régime* of high value, a *régime* from which the weaknesses of defective methodology are being steadily eliminated, and which is likely, in the near future, to exhibit the full virtues of the traditional University studies, if indeed this is not already the case.

PROFESSOR T. SMIDDY, M.A. (University College, Cork): I think that my best answer to the statements made by Sir Theodore Morison would be to describe to you very briefly the organization of the Faculty of Commerce of Cork, and I avail myself of this opportunity to refer to the fact that in so far as that Faculty has achieved success, it owes a good deal to the reader of the first paper, Sir William Ashley, who for three years was our extern Examiner. We realize in Cork that our education must be of such a character as to fit the student for any department of business or any department of industry. Now, that necessarily carries with it the fact that the education must be of a liberal character. The students who come to the Faculty of Commerce in University College, Cork, are students who have, generally, no financial backing, and no commercial tradition. Seventy-five per cent. of them are the sons of small farmers, the sons of workmen, the sons of teachers; therefore, we must give them that education which will enable them when they go into any type of business to adjust themselves quickly with little experience to that particular business. Our students must take three Arts Subjects or one Science and two Arts Subjects, and reach the ordinary B.A. standard in these subjects. Then the background of the curriculum is analytical Economics, related throughout to the big practical problems of industry, banking and finance. We can say, then, that three-fourths of our course is of a liberal character. On the other hand, we have got to face the difficulty that our students, having no financial backing or commercial experience, have to be able to earn their living the very moment they get their degree, so for that reason we pay a good deal of attention to accounting. We have lectures in accounting, and arrange for a certain amount of practical work. In addition to that, we find it necessary that our students should get something of the business atmosphere, and we have accordingly succeeded in inducing some big accountants and business houses to take them for two or three months during the summer holiday. These firms treat them as cadets; they move them from one department of their business to another. Each year they go to a different type of business so that at the end of three years a

student in our Faculty can have nine months' practical experience of three different types of business. Success has accrued to our efforts in so far as we started our Faculty nine years ago with one student, and to-day we have sixty-five students, and all the students to whom we have given Degrees find themselves in different parts of Ireland, Scotland, England and South America, filling positions of responsibility and administration.

SIR NILRATAN SIRCAR, M.D. (Calcutta): The previous speakers have dwelt upon the desirability of introducing courses in Commerce and Industry into the Universities. This step is, however, a matter of necessity with us in Bengal, having regard to our economic, social, and political condition.

We have an enormous agricultural area (about 24,000,000 acres at present) yielding all sorts of valuable crops. There is a large yield of coal from a number of mines in a coal area of over 800 square miles. The value of hides and skins exported annually from Calcutta is about £6,000,000. The annual value of export trade of Calcutta may be estimated at about £55,000,000, and that of import trade £40,000,000. The volume is increasing steadily, and there are immense possibilities of further agricultural, industrial, and commercial developments.

About one-fourth of the population, numbering over 10½ millions, live upon incomes derived from landed property from service or professions. Of these about 10 per cent. have fair incomes; but the average income of the large majority (which includes the middle classes, the brain of Bengal) is very small. Most of them suffer from severe pinch of poverty.

There is no difference of opinion as to the development of commerce and industry affording the only possible solution.

As regards industries, a few have been started by Bengalees recently. Some of them are suffering from want of properly trained men. In the extensive business of Bengal the people of the province have but a subordinate part. Various causes have combined to bring about this result, among which may be mentioned our social traditions, the absence of training in commerce and industry, and the pre-eminently literary character of our education, our lack of enterprise attributable partly to the prevalence of the permanent system of land-tenure in Bengal.

There is necessarily a large volume of internal trade, ministering to the needs of a population of 45 millions, which is still conducted by our people more or less on traditional lines, for want of a knowledge of modern methods. A lack of proper training has also resulted in creating a dead head in Calcutta for many of our

influential traders, who are carrying on extensive business in commodities like hide, jute, grains, coal—for which there is a world-wide demand. The same drawback stands in the way of many of our traders taking an adequate part in the import trade. Industry cannot develop for want of properly trained experts and managers.

The present number of our students is about 26,000; about 4,000 graduate every year, the majority in the faculty of Arts, and a considerable number in Law. The drift is towards the legal profession—there being now about 12,000 members in it. Evidently some other outlets must be found for our young men.

At present there is no arrangement in the University for imparting training in commercial or industrial lines.

In the interests also of trade and industries themselves, the best intellect of Bengal must be enlisted in their service.

Again, the economic strain of modern times is pressing upon us very heavily, and is leading to a great political tension. The keen enthusiasm and surplus energy of our young men must be at once engaged in the cause of economic development of Bengal.

For this purpose the University must take the first steps and provide training for our young men in commercial and industrial subjects.

The immensely rich agricultural, commercial, and industrial resources of India will furnish careers and employment to thousands for many years to come.

Therefore, following the example of British and other Universities, and in the best interests of the people of Bengal, economic as well as political, the Calcutta University is about to take early steps to organize a system of industrial and commercial education on a broad and comprehensive basis.

H. R. Rathbone, M.A. (Liverpool): I was very much interested when Sir Theodore Morison threw that apple of discord into our midst. I confess to sharing with him some doubts as to the desirability for special training at the University for commerce or industry. The one thing that the intelligent business man asks for from a University trained man is that he shall have been taught to think. Whether the young man is destined for commerce or industry the range of outlook is so wide and the number of subjects so multitudinous that he cannot cover the whole ground that is desirable. It seems as though the time had arrived when it is necessary to limit the range of subjects for business men just as is already done for medical and legal students.

It is on this ground that I support a Faculty or School of Com-

merce run on real University lines free from any attempt to turn out ready-made business men. Such a school may be developed into a first-class training school—the subjects are most important for any one to study, many are difficult and abstruse, and open up new and untouched ground for research.

A very wise engineer, who had not himself been at a University, said to me that he did not look for engineers necessarily from Universities with Engineering Faculties. If the man was of the right quality and calibre, what he preferred was a man who had taken a first in Greats.

It is the way the student is trained far more than the subjects in which he is trained that is of supreme importance. Whether the student is destined for commerce, administration or teaching, the main thing to remember is that the student shall be taught to think correctly and quickly, and that his or her sympathies should be kept fresh, and intelligence alert.

If, then, a division of subjects has, as I think it has, become necessary, the subjects should be so grouped, not only with a view to the future career, but with a view to the character and mind of the student.

THE UNIVERSITIES AND THE TRAINING OF SCHOOL TEACHERS.

First Paper.

FOR good or for evil, and whether the academics of to-day like it or not, Universities have always been associated with the production of teachers. No doubt they had open doors for all comers, and prepared for their life-work all sorts and conditions of men, but in the last resort the Master's degree was a licence to teach, and the most valued privilege of the graduate was the *jus ubique docendi*. Indeed one is tempted to say that in their early stages the Universities were practically training colleges, and I for one would be quite content to give them that name, were it not for the rather important fact that they did not *train*. They provided the future teacher with all the subject-matter he was afterwards to communicate to others; they gave him the *what*: the *how* he had to attend to himself. Those old Masters, indeed, went out into the world with a higher warrant than even their *alma mater* could give, for were they not what Professor Laurie so aptly called "teachers by the grace of God"? The old Universities cannot be said to be opposed to training; they merely did not know there was such a thing—as indeed there was not. When we take a bound from the old University times to the nineteenth century, we find the idea of training teachers coming to the notice of the public, but not at first to the notice of the Universities. When the notion began to penetrate into academic circles, it met with but a chill welcome. No vigorous action was taken against it; there was mere dull indifference. The professors saw no sense in all this pother. For centuries they had taught generations of men who had turned more or less automatically into schoolmasters without any further trouble. There was an ingrained habit of sending forth graduates who drifted into schools and there picked up, at the expense of their first half dozen classes, a certain mastery of their craft. The degree was still practically regarded as a teacher's certificate. When students in training to be teachers began to be sent to the Universities for the academic part of their work, the professors looked askance at this new type of University pupil, and did what they could to keep them in their place as mere students. The academics were unwilling to recognize them as people in training for a definite profession, and did what they could to minimize opportunity for professional studies, since these competed seriously with the academic studies for the time and interest of the students.

In the two oldest Universities, the matter of training was

practically ignored. But in the Scotch Universities and the newer English Universities, it was found impossible to adopt this attitude. The arts faculties began to find themselves more and more dependent for their very existence on the supply of students who were definitively being prepared to be teachers. Many of the professors maintained the attitude—a rump of them still do—that their work is to communicate a certain amount of knowledge to their pupils in the subjects of their chair, and that they have nothing to do with the use their pupils propose to make of this knowledge. The attitude is perhaps reasonable on the part of the individual professor, but it cannot be justified when applied to the University as an institution. As such it was gradually forced to take account of the needs of teaching as a profession, and to provide opportunities for young people to prepare for teaching as they prepared for divinity, law and medicine.

The beginning was the introduction of Education as a University subject. The establishment of chairs in education was a slow business. The professorial element found great difficulty in rising to the fact that education as such could be taught on a University level. Gradually, however, they learnt their lesson, aided no doubt by the great extramural development of the theory and practice of training as applied to teaching. Particularly in Scotland the training Colleges came into contact with the Universities by the simple process of sending their students there to receive the academic part of their instruction—the purely training work being done at the Colleges. The Government made grants that enabled Colleges to send their students to the University classes by paying fees exactly as any private student would do. The training Colleges in fact were *in loco parentis* with regard to the students they sent to the University. The next development was the establishment of University departments by means of which the University itself took a hand in the training of teachers, the professor or lecturer in education being the head of this professional branch. This is the stage at which we now stand. But there is a movement in favour of a still closer connexion between the Universities and the general provision of teachers for the country.

Throughout the development that led to the present position there has been going on a struggle between the professionals and the academics, with regard to the division of the student's time. For a while the total course for the students ran for three years, and during this time the unfortunate student-in-training was expected to do all the ordinary study for the degree, and at the same time work in all his professional subjects including a good deal of teaching practice. Naturally it was pull professor pull trainer ;

each struggling for the time and attention of the harassed student. In the struggle, the trainer was heavily handicapped, for after all he was as keen as the academic people to secure a degree for his pupil. Accordingly the academics were gradually getting the upper hand, till a compromise was effected by the Board of Education making arrangements for a four-year course, of which the first three are to be entirely given up to academic work, and the final year entirely to professional work. The scheme is running extremely well, except in the case of London, whose antiquated examination dates put its students in a position of nferiority to those of the other Universities.

Not all students who propose to become teachers can afford a four-year course; and some administrators maintain that there are certain types of teaching for which a four-year course of preparation is excessive. Others do not go this length, but while admitting that the ideal arrangement would be one in which every teacher had a degree course, they hold that the present economic conditions make this ideal impossible and that we ought to make provision for the training of teachers through a shorter course. The problem then arises, whether the University should become responsible for the training of teachers who are not of what is called University rank, and do not look forward to taking a degree. In London University, for example, at the present moment, there is a proposal to exercise some control over the two-year students who are being trained in the various Colleges in the London area under the Board of Education. A strong feeling exists in the University, however, against having anything to do with non-matriculated students who are not definitely studying for a degree. In some of the other English Universities two-year students do form part of the education department. Though they are not regular University students, they may attend certain University classes for which their attainments fit them. In Scotland the *ad hoc* authority for the training of teachers makes itself responsible for the whole of the training, and co-operates with the University to that end. In London the contention is that the University should make itself responsible for the whole of the training of teachers within its thirty-mile radius. This need not in any way lower the standard of University teaching. The advantage would be a certain loosening of the hard-and-fast lines of a course of training determined for the whole country by, say, the Board of Education. There are, no doubt, some advantages in having the training of teachers administered from one centre, but apart from the purely administrative and financial aspects, it is a loss and not a gain to have all the teachers of the country trained on the same

model. Certain minimum requirements may be laid down, and certain administrative conditions; but on the purely educational side, local freedom should be conserved, and nowhere is such freedom likely to be more wisely used than at the University. There is a danger of the spread of a system by which local authorities train their own teachers within their own area. Under this plan it would become usual for a boy to be educated in his local school, sent to the local training College, and then brought back to teach in his own district, in some cases in his own school. Obviously the standing of the University as a *studium generale* would provide the best antidote to this in-and-in breeding. There is no doubt that a corresponding danger faces the University itself. The increase of Universities in England certainly tends towards the establishment of the local or civic University ideal. But the presence of a complete arts faculty with a broad general appeal, and the attraction exerted by the brilliant specialists that each University will in its own interest gather to itself, will no doubt draw a fair proportion of students from all parts of the country and thus help to maintain the *generale* ideal.

The analogy of law, medicine and divinity is all in favour of the University taking up the training of teachers as part of its ordinary work. If it can cater for engineering, not to speak of commerce, surely the University need not go back upon its original function of preparing teachers. To be sure there is a complication, in that the subjects that are regarded as supplying culture to the ordinary student provide professional material for teachers. In the old days it was enough if the University satisfied itself that its *alumni* had acquired a sufficient amount of knowledge. Now it is called upon to do for the teachers what it professes to do for the engineers and the doctors—to turn out competent professional men ready to enter straight upon their life work. The professional training of teachers really offers to the University the nearest approach to the academic ideal. The material with which the teacher works is in itself cultural. The University gets for cultural work three-quarters of the teacher's whole preparation period, and if it is true to its ideal, it can turn the remaining quarter into something hardly less cultural than the subject-matter. When to these considerations is added the fact that during the three years of non-professional work the teacher spends his time in broadening studies in the company of men and women preparing for all manner of walks in life, we find that the University has cause to welcome from every point of the view the possibility of extending its work in the training of teachers.

JOHN ADAMS.

THE UNIVERSITIES AND THE TRAINING OF SCHOOL TEACHERS.

Second Paper.

Australian Universities.

It was not till my arrival in April last that I learned of the desire of the Committee that I should present a short paper on the training of teachers in the Australian Universities. I am glad that the question of professional preparation for School work is to be discussed, but I fear that my account of practice and opinion in Australia will be less satisfactory than I could wish, partly because it has been written amid the distractions of travel and partly because my information may not be as precise as it might have been had I consulted my colleagues before leaving Australia. My statement will therefore refer in the main to the University of Sydney; but as both practice and opinion are not seriously divergent elsewhere, what I have to say may be taken as in general true for each of the Australian Universities.

Public education in Australia is the concern of each State Government, and is supported entirely from Parliamentary grants. Neither the Commonwealth nor the Local Government has any concern with education. With the exception of the Universities, practically all educational institutions in receipt of public financial support are under the control of an Education Department in charge of a Minister of State.

Professional training for teaching in primary and in secondary schools is provided by the Universities and by the Education Departments. In each State the Education Department maintains a College for Teachers. These Colleges are under the control of the Minister for Education, and are supported entirely from public funds. The University exercises no direct control. But in each State except Western Australia the College is situated within or adjacent to the University grounds; the head of the College and often other members of its staff hold teaching positions within the University; and certain of the College courses are recognized as qualifying for the professional diploma of the University. In Sydney this indirect and informal connexion between the University and the Teachers' College has been specially close. The Professor of Education is head of the College; the Vice-Principal a lecturer in Education; the evening course in education is given

by one of the College lecturers, the post-graduate course in experimental education by another. Further, certain of the College courses are recognized by the University as qualifying courses for the diploma in Education. There has also been a good deal of transfer of staff—both temporary and permanent—between University and College.

In each University courses in Theory and History of Education are offered, and in some a diploma in Education has been established. In Sydney the diploma can be taken only by graduates. Some of the diploma work may be taken during the undergraduate course, but few students have time or energy for this. Almost without exception, the work for the diploma is done during the fourth or post-graduate year. The majority of those taking the diploma course has so far consisted of students preparing for teaching in the Public Schools. In New South Wales no professional qualification is required for teaching in non-State Schools, and there is thus little incentive for young graduates to incur the expense of a fourth year of preparation. In Victoria, on the other hand, the Act requiring the registration of teachers has induced a much greater proportion to undergo training. The Education Department in Sydney now recognizes the University diploma as a professional qualification for admission to the teaching service. No young graduates are now appointed to State Schools unless they hold this diploma.

Some years ago proposals were made that the College in Sydney should be transferred to the control of a delegacy of the Senate of the University. These proposals met with some acceptance, but were not carried into effect. As the College building is now situated within the University grounds, it is possible that in the near future a change of the kind indicated may take place. Such a change would but give formal recognition of a relation which has steadily been growing closer. I am of opinion that the change would be beneficial to the University, to the College, and to the teaching profession in general.

The quality of the work done in a professional College depends very much on the academic qualifications and outlook of the staff. In Sydney appointments are made by the Public Service Board on the advice of a Selection Committee. It has been the policy during the last fifteen years to appoint graduates only, except where the nature of the subject makes this impossible. Further, it has been the practice of the selection committee to get the opinion of the University teachers on the relative merits of candidates. The influence of the University thus exercised, though indirect and informal, has been very real, and has done much to secure a high

level of academic competence, and to counteract the danger of inbreeding to which a closed service is specially liable. Further, the quality of a College staff is affected by the salaries offered, relative to those paid in other branches of teaching. College salaries have been determined mainly by two principles—the first, that senior lecturers should be paid at about the same rate as University lecturers; the second, that the salaries of College lecturers should be higher than those paid to persons of similar qualification and length of service in the Primary and Secondary Schools. For instance, the present salary of a senior lecturer in College is £720: that of a University lecturer £700; and that of a High School headmaster £750.

During 1920, 389 of the students preparing for teaching in New South Wales were taking a University course leading to a degree. Of these 191 were in Arts, 96 in Science, 10 in Agricultural Science, 19 in Economics, and 73 were taking the post-graduate course for the diploma in Education. Thus the University exercises a strong influence in forming the character of the abler among the future teachers. In no long time the great majority of those holding the more responsible positions in the education service as primary teachers, secondary teachers, or inspectors, will be men and women whose training—academic and professional—has been under the direction of the University, and in the main given by University teachers.

Students now enter the Sydney Teachers' College on the completion of some form of secondary course. No preliminary teaching experience is now required. The usual qualification for admission is the possession of an Intermediate or Leaving Certificate. These certificates are issued by the Education Department to pupils who have spent the required time in a Secondary School, and have passed a public examination conducted by a Board of Examiners, half of whose members are nominated by the University. By means of these examinations, and its requirements for matriculation, the University influences the earlier stages of the teacher's training.

On the completion of his course for the bachelor's degree, the student who intends to enter the teaching service devotes a fourth year to professional preparation, and takes the course qualifying for the diploma in Education. The requirements for the diploma are: (1) the first year course in Philosophy; (2) Theory and History of Education; (3) Principles of Teaching; (4) School Hygiene; (5) Observation and Practice Teaching in Schools. Courses (1) and (2) may be included in the Arts course, and if this has been done, two additional courses must be taken. The courses

most generally selected: (1) Experimental Psychology and Education; (2) an advanced course in Philosophy; (3) a further course in the student's special subject or in a related subject. A fair number of these graduate teachers continue their studies, and present themselves later for the M.A. degree.

In addition to its day courses, the University of Sydney has for many years offered evening courses qualifying for the B.A. degree. A considerable proportion of these evening students has consisted of teachers, and in this way the University has influenced a large number of the older teachers.

I have now given, in very brief form, an account of the ways in which the University influences the training of teachers in New South Wales and in the other States. The limits of this paper prevent me from raising many important questions. For instance, the present method of recruiting the teaching service seems unsatisfactory; and it is unfortunate that the rural teachers are so largely those who do not come under any direct University influence. On these and other questions University influence and opinion might with advantage be brought to bear. Indeed I would go further. A University, it seems to me, has at least two duties with respect to the School system of the community which it serves. The first is to frame a scholastic policy to fit the changing needs and opinions of a growing community. Something of this is already done in Victoria by the Schools Board, and for the Commonwealth by the Conferences of the permanent heads of the education departments. But neither has attempted any systematic survey. The second is to direct the preparation of those who are to carry out this policy. If the teaching service is to embrace different ranks of professional qualification, as would seem to be the present tendency, then the higher ranks should come directly under the influence of the University teachers. A stream of influence from the highest educational institution would thus circulate through all grades and types of School, with advantage to the Schools, the University itself, and the general intellectual life of the community.

A. MACKIE.

Discussion.

THE REV. E. G. WAINWRIGHT, M.A. (Chairman of the Council of Principals of Training Colleges): I stand here this morning as the Chairman of the Council of Principals of Training Colleges in England and Wales. We are very grateful indeed to the Congress for the opportunity of putting before you the views of the Council of Principals. This Council was established in 1913, and was very soon faced with the possibility of far-reaching developments in educational matters. In 1918 a special Committee was appointed to consider the future of Training Colleges in view of impending educational developments. The Council realized that the future of Training College work would be vitally affected by such changes as the raising of the school-leaving age and the establishment of Central and Continuation Schools. It also realized that the distinctions were being broken down between primary and secondary education to some degree, and it was obvious to the Council that, in these circumstances, it would be necessary to look for a more highly equipped type of teacher—more highly equipped from the point of view of character as well as from the point of view of attainments. The teachers themselves are eagerly looking forward to the time when the ordinary teacher in the elementary schools of the country shall be of graduate standing. And the Council that I represent felt quite plainly that the Training Colleges must look beyond their own borders if they are to attain their objects and to realize their ideals. In 1919 a series of resolutions were drafted and approved by the Council, and I will ask your indulgence while I read the most significant of them :—

> " Any scheme for the improvement of the general and professional education of teachers should secure that the work of Training Colleges should be brought into closer connexion with the Universities and should provide for a course of study extending over not less than three years."
>
> " The education of those candidates who do not qualify for Degree Courses should be conducted by the Training Colleges under University recognition."
>
> " The Training Colleges should be organically connected with the Universities and so organized that their teaching might receive University recognition either for Degree purposes or for the purposes of a Diploma."

Other resolutions pointed to the need of extending the Training College course to a period of four years for Degree students and

three years for all others. Furthermore, it was proposed that a Conference should be held between representatives of the Board of Education, representatives of the Universities and representatives of the Training Colleges. That Conference was arranged for us through the instrumentality of Dr. Hill, Secretary of the Universities Bureau. The Conference met in September last year, and, although its object was chiefly consultative, much was achieved in the direction of surveying the position and removing misunderstandings. At the conclusion of the Conference the Principals of Training Colleges there assembled passed this resolution :—

> " In the opinion of the representatives of Training Colleges here assembled it is desirable that closer connexion should be established between the existing institutions for the training of teachers and the Universities of the country,"

a resolution which was reaffirmed at our meeting in January last.

What steps have been taken in order to realize in any degree the ideals which our Council has set before itself ? They have circularized the governing bodies of all the types of Training Colleges, urging them to do their utmost to establish a vital connexion with Universities in their neighbourhood. Quite recently steps have been taken successfully to attach, to affiliate, or to connect Training Colleges with the Universities of Birmingham, Durham, and of London. This, I feel, is not the time or the place to go into detail in this matter. All I think my Council would wish me to invite the Congress to do, if not as a body at any rate as individuals, is to give a sympathetic approval to the steps which they propose to take. We feel that the time has come when we must look beyond the rather narrow horizon of the Training College world and obtain from the Universities that assistance which we ourselves cannot provide.

THE REV. H. B. WORKMAN, D.D. (London) : I speak for a few moments to you this morning in a double capacity, first as a representative of a Training College engaged for eighteen years in London in the training of teachers, and secondly, as one of the representatives of London University. May I say first as a Training College Principal, that I think that the one thing we have to aim at at the present time is to lift the elementary teacher and give him, not necessarily a Degree, but give him that University atmosphere which is essential for a true and broader outlook. There is nothing more deplorable than localism in training and outlook, and that narrowness which comes from too

great a development of the seminary spirit which has characterized English Training Colleges in the past. I hope the time will come when, every teacher, whether elementary or secondary, will enjoy that larger atmosphere and have that larger outlook for which Universities ought to stand. I know that is a long vision, but within twenty years, when our financial distresses have passed away, it ought to be accomplished, and the National Union of Teachers, the Labour Party, and those whose children are most affected, are most earnest in pleading for that larger outlook.

May I say a word as representative of London University? The Senate at its last meeting approved a scheme. It is only embryonic, there are many details yet to be filled up, it has yet to go to the Board of Education—from whom I am sure we shall receive that sympathetic consideration which has always characterized them in the past—it has yet to be submitted to the various Training Colleges of London, but the scheme is passed, and I look upon that scheme for taking over the training of something like 3,000 teachers in London who are not reading for a Degree, but who ought to be brought into the University atmosphere as the beginning of a larger and wider work.

Yesterday we spent a very happy morning in listening to a plea that the University should go out and throw itself into the education of the adult. At London we have got a Degree in Commerce; I believe we have a Degree in Estate Management. Surely the one field above every other field that the University ought to concern itself with is the field of training teachers, not merely for the higher placed schools, but teachers for the common schools of the country. And then, may I say another thing before I sit down? and that is, you are only reverting to old type in so doing. In the University of Oxford there was a time when you had a Degree in Glommery specially instituted for the benefit of school teachers. In pleading that you go back to a Degree in "Glommery," I am only pleading that you revert to these wise old times. The scheme that the Senate of London University has passed is only a beginning of larger and wider things, an attempt to bring to the great thirsty desert of the elementary schools of this country that larger fructifying stream which a University was instituted in order to bring.

PROFESSOR J. H. MUIRHEAD, LL.D. (Birmingham): I am not the Principal of a Training College. I am not even a Professor of Education. I have not even a Diploma of Education. I have, however, been a teacher in a Training College in one of our British Universities for the last thirty years, and I felt that I could not be

present at this gathering without giving my testimony to the extreme importance of this side of the University's work, and to congratulate the younger men and the younger women here upon the prospects of the future. That is the first thing that I wish to say. The second is this : that with this immense influence which you of the Universities are going to have upon the future of the teaching profession, and through it on your separate nations, there comes a very great responsibility, and there is one aspect of that responsibility which has not been alluded to this morning in any of the papers or speeches, but in which I have myself taken from the beginning a great interest. There is nothing which so dominates the mind of the teacher or is so important for his whole attitude to his work than his general ideas as to his place in this world, and the whole subject which we generally speak of as religion. Now this is solved to a certain extent in that we have denominational Colleges, but it is not solved for *you* by the fact that there are denominational Colleges. You have to face the question of what you are going to do, what you are going to teach, what your attitude is going to be upon this whole question, and, as far as I can judge from almost all the Colleges with which I have come in contact, this question has not been quite satisfactorily dealt with. You have given it on the whole the go-by. Many of your Colleges, many of your Universities are like our own in Birmingham, with a tradition of secular education by which religious matters are more or less to be set aside as something upon which you have not got anything particular to say. Now we have been told already this morning that the Universities are to perform the function of the churches. There is no more important function that the churches perform than to give some leading creative ideas to their young teachers on these subjects. I merely wish to put it to you as a problem, if you have not solved it already : what are you going to do upon this subject ? Are you going to leave it to the denominational Colleges to fight out among themselves, while you neglect what every teacher who leaves your room will at once be faced with when he comes to be asked, as an educational authority asks him, to deal with ethical and religious questions and to teach morals and religion ? I have no solution. We are experimenting in Birmingham, but I am quite sure that there is a better way of dealing with it than simply giving it the go-by and leaving it to individual teachers. Please consider this. I can hardly conceive anything which this Conference before it parts should consider more seriously than what the Universities are going to do in endeavouring to give, I don't say a substitute—I don't believe in substitutes—but what they are going to give in

place of the ordinary denominational teaching on these subjects which, good as it is, cannot satisfy, and we are right in maintaining that it will not satisfy, the intellectual needs of your Universities in the Dominions and in our own country.

PROFESSOR HELEN M. WODEHOUSE, D.PHIL. (Bristol): May I voice very briefly the views of what seems to be a reactionary minority, which I sometimes fear is being reduced to a minority of one ?

I am going back of Prof. Muirhead's speech. I agree with every word he said. I want to take up the point that was raised by the speakers before him. It was said that there is a great craving at present for a closer connexion between teachers and the Universities ; that the ideal in many people's minds is that all teachers should have had a University Degree Course. It is a fine ideal, but I gather that even the earlier speakers do not think of it as a possible ideal in our own generation or for two or three generations yet. We shall not, I imagine, insist yet awhile that every one who teaches children under twelve shall have a University Degree. There are not enough people of that calibre of mind capable of staffing all the professions—teaching cannot claim so many of them. Let me, then, assume that as the first point. There are going for many years to be a considerable number of teachers who will not take a Degree Course. What shall we do with those teachers ? There is one course which I am sure is wrong, which is not exactly, I believe, in danger of being followed, but which is certainly being preached. It is being urged by many people that these non-Degree teachers in training should be absorbed into the Universities. I am convinced that this is the wrong course. From experience of two University Training Departments and of a two-year College, I feel there is no comparison between what the non-Degree student in training gets in a good two-year College, and what he gets in the University Department, where he is overshadowed throughout all his course, where he never reaches a Senior year, where he has not the normal experience of leadership. There is no comparison. The University is taking him under false pretences. I urge, therefore, with all my force of conviction that a student who is not going to take a Degree should have a College life of his own, not as a hanger-on at a University. It is a pity that it should be so often a segregated life. My hope is that when there is any money, Training Colleges will enlarge. There is any amount of room and demand for College education for people who are not going to be teachers, and who are not of the calibre for University Degrees. It is, I

think, one of the biggest gaps in our educational system at present. But meanwhile, preserve the independent College life for the non-Degree student.

Then, a comparatively small point. If these independent Colleges are to survive, shall they affiliate themselves to Universities or shall they go on under the control of a State Department? I think if they keep their independent life it does not matter so much. I think that as the London Day Training College has most certainly a real and honoured place, so has the Goldsmiths' College. Nevertheless, my own two-year College experience does not convince me that we should not go on under the Board. I have found the Board of Education by no means a limiting and hampering institution, but a highly experienced concern with a good deal of practical wisdom, and my own inclination would be to stay for the present under the wing of the Board. The Universities are generous in taking on work that is recognized by everybody as not of the same standard as Degree work. I am not sure that at present they do it so well as the Government Department which is responsible for it.

P. GILES, Litt.D. (Cambridge): It seems to me that the discussions we have been having this morning dovetail into one another a good deal. I am very sorry that the Chairman who was to be here this morning has passed away from us because he was one of those men who had had very wide experience of both sides. He knew a great deal about commercial and about educational life. There is a difficulty with regard to those two subjects and that is this, that in the University of Cambridge, at any rate during the last ten to fifteen years, commerce has been a very serious competitor with the teaching profession, and it can offer pecuniary rewards of a much larger character than, I am sorry to say, are offered by any teaching body in the world. I do not know that education will ever be able to compete with commerce when commerce comes to the University and demands its best men. I will not say that it would be bad for the history of the world that commerce should come and take the best men, because the life of this country, perhaps more than most countries, is bound up with the development of its commerce, I suppose, but the two things work together, and I should hope that what has apparently been happening in Cambridge will not go on, and that is that men should cease to become teachers. It is sometimes forgotten that historically the business of the Universities was from the beginning to make teachers. The B.A. Degree was no Degree at all, and in the University Statutes at Cambridge it is

never called a Degree. It really was a licence for a beginner to go and teach. He was qualified as a journeyman and he had to go out and teach for three to four years and then come back before he was recognized as a Master of his own Art and became a proper graduate of the University.

The University of Cambridge tackled the question of the relation between the two subjects forty years ago, and has had connected with it a Training College which began with training for elementary teaching and developed later a department for secondary teachers. That College is celebrating its Jubilee in its enlarged form next week. It has had a very interesting career, and, as my own College has for many years given an Exhibition to schoolmasters who desire to receive a University training, I have had some opportunity of tracing the effect of this school upon education. A large number of the students of the school have reached places of importance and dignity in connexion with teaching, and the interesting thing is, that of those to whom we ourselves have given Exhibitions, only one has given up the teaching profession—including in that profession the work of the clergyman as well as the work of the schoolmaster, because in modern times, when (shall I say ?) threats of future punishment are no longer the influence they were in earlier times, it is the exposition, the teaching, of the clergyman which is a very important part of the work he discharges for the general public—the only exception was a shrewd Scotsman who migrated to Canada and engaged in commercial pursuits, not without success.

I am not inclined to agree entirely with Professor Wodehouse about the separation of the University and the Training Colleges. I was trained myself as a teacher in my very early days, and the difficulty—I can speak from the inside of the ordinary Training College course—is that it is too narrow, and the great advantage of connecting up with the University course—whether a man or woman takes a Degree or not—is that the teacher is brought into contact with a broader view. On that ground mainly I should argue very strongly for the Universities, so far as possible, being brought into connexion with Training College education.

J. W. JOYNT, M.A. (New Zealand): I am afraid that what I am going to say may be regarded as rather visionary and unreal. I am one of those old-fashioned persons who believe—and the longer I live the more I am convinced of the fact—that the teacher is born, not made. Now, that might be regarded from one point of view as the death knell of systematic and organized training.

To me it is rather a counsel of perfection. Perhaps the attainment of such an ideal requirement is not always practicable ; but it should be eternally aimed at. If I may put it in this way : In addition to all these valuable discussions we have had about organized training, and so on, I think we ought to keep evermore before our eyes the fact that the radical requirement of all in a teacher is personality. I think we may organize for years, we may train teachers, we may draw up systems of ethics which are to be preached from text-books to children, we may draw up text-books of psychology, and enable teachers to train their pupils in analyzing their own faculties and their own states of mind, we may draw up even large ideal and broad schemes of religious training ; but unless we keep before our eyes always the necessity of developing personality, sympathy, and that mysterious and perhaps rather mystical capacity of entering into the minds of children and young people, it doesn't seem to me that we shall ever get to the root of the matter, or ever attain the success which is of such vital moment in this department. The great teachers of the past have all developed systems which were not so much based on theory as the outcome of their inner souls. It is, of course, absolutely necessary that we should have organized methods, that we should train teachers to work along certain channels, and to pursue them in a certain precise order, and all that belongs to a developed system of methodical education ; but I merely intervene in the discussion for this purpose : to appeal to those who have to deal with budding teachers, that their first aim should be to develop personality in the teachers, to broaden their outlook, to bring them constantly into touch with the difficulties and little aspirations of early years, which it is necessary for them to enter into if they are ever to produce an impression. Let us just keep this in mind. If I may make a personal remark ; it was my misfortune never to get any systematic training as a teacher, " hence," you would say, " your utter failure in that capacity." That may be so ; but all I can say is this : I have spent a considerable number of years of my life in teaching. Whether it was successful or not, I always felt an inner conviction that it was the work I was sent into this world to do ; and I do maintain that, unless we feel that internal conviction, our work will never be even partially successful. It is not enough to turn out Honours Graduates, and then hurl them on to schools ; but they must be made to feel they have an inner call to do this work. I only ask you who are deeply and intensely interested in this matter to keep this aspect of the case everlastingly before your eyes.

PROFESSOR SIR RICHARD LODGE, LL.D. (Edinburgh): I want to say one word in favour of the contention that there should be the closest possible connexion between the Universities and the training of teachers. My reason for speaking on the subject is that in Scotland, from which I come, we have a system in which on the whole this has worked out extremely well and in which, specially in Edinburgh, the connexion between the Training College and the University is exceedingly close, and I think the training of teachers has enormously benefited through this connexion. Practically we have three methods in which the University—or perhaps four methods—by which the University contributes to the training of teachers. There is the two years' course, which is primarily a Training College course, but in which the students are encouraged by the Training College to take at least two University classes during their two years. They do not become graduates, but they do go away with a higher sense of the possibilities of study and work in the subjects which they are going to teach, which is of enormous value to them in their future life and work. The greatest curse to teaching is the idea that a teacher need know little more than the amount he or she wishes to teach to the student. It is of vital importance that the teacher should, while realizing the limits of the pupil's capacity, be able to teach from a standard far above that which the student at the immediate moment can hope to attain, and it is only a teacher who does approach from that higher standard who is able to teach in a proper manner.

Then we have two forms of a Graduation Course, either a course in which the University classes are combined with the Training College course, so that during the whole of the four years students are partly trained at the University for their Degree and partly trained at the Training College for their profession; or the alternative system by which students are encouraged to take the three years for their Degree first of all, and then concentrate on a year's training at the Training College after they have graduated. The exact degree of merit or demerit between the two systems is still a matter for decision in the future, but both have their advantages. In addition, those who desire to be Secondary Teachers, take their Honours Course at the University (normally four years) with a subsequent year at the Training College.

There you have a practical system which on the whole does satisfy the desire, which has been expressed from many quarters, to bring the Universities into close connexion with the Training Colleges, and I venture to say that such success as the educational system of Scotland possesses at the present time is largely due to

the fact that the Universities and the Training Colleges are so closely connected and co-operate so closely together. It is realized that there are many teachers who, because these opportunities were not open to them at the time when they went through their training, have not had the advantage of the training which they could obtain if they were entering their profession now ; and the University of Edinburgh has within the last year gone out to these teachers, inviting them to a Summer Course, or rather to a two-Summer Course, in which they may study subjects on something like a graduation standard, giving them this tardy opportunity of extending their knowledge and outlook in subjects which they have been in the habit of teaching, and I venture to say that I have never met a more grateful or appreciative class or one that it was a greater pleasure to teach than these teachers who have come back to try to raise themselves now, late in life, to the standard which was not open to them at the time of their original training.

Sir Theodore Morison, M.A. (Durham, Newcastle Division): I think we really want to get down to practical details, to know exactly what we mean. The co-operation of the Universities as illustrated by Sir Richard Lodge, is a point with which I think a very large number of us will agree. We desire to assist them in any way which they can suggest of that character, but what has been said, not only here but elsewhere, is that you want to get the Training Colleges into the Universities—and, of course, I refer to the two-year Training Colleges—it is said that you want to bring to them the University atmosphere. Well, speaking from the University side, I entirely agree with what Prof. Wodehouse said ; but what I want to ask is : What do you really mean and how do you propose to do it ? Real association is not possible. As responsible for a not very large College in the North of England, I say frankly, that I would look with great alarm at a suggestion that you should flood my College, which has 800 to 900 under-graduates, with 4,000 to 5,000 two-year students. I cannot stand that amount of dilution with advantage. Prof. Childs advocated a very close association of the Universities with the Training Colleges. Is it possible to conceive that the University College of Reading could absorb even 1,000 two-year students without running the greatest danger of impairing the University character and diluting the University atmosphere to such an extent that neither would get any good out of it at all ? We want something much more definite, like the suggestion that the University should go out and speak to the Training Colleges, but I doubt very much whether

the idea of bringing the Training Colleges into the Universities is practical politics.

F. J. R. HENDY, M.A. (Oxford). I should like to say a few words about what is being done here. Until recently there were in this University two separate organizations—one for the training of elementary and one for the training of secondary teachers. Two years ago a new organization was created simply for the training of teachers. Every one who knows the circumstances is convinced, and I think experience has shown, that that was a great step in advance. Not merely was there a great saving in administration and teaching power, but it was pedagogically a sound step. We feel strongly that in whatever type of school a teacher is going to teach, there is a certain unity about the art of teaching which justifies a common course for teachers of various grades with, of course, adaptation to the special type of school and to the subjects the student proposes to teach.

The question of the two-year student has been dealt with fully here, and perhaps I may venture to say a word, as I was formerly Principal of a College for two-year students. I agree with the resolutions read out by Dr. Wainwright. At the same time I do very strongly agree with Professor Wodehouse upon one point. I do not think it is possible to absorb into the Universities a great body of two-year students. The two-year course must first be converted into a three-years' course. It is possible, and, of course, it has been done in the past, for a student in three years to take a Degree at the University and to undergo at the same time a fairly satisfactory course of professional training, but it will be many years before we can do without these two-year teachers, and I think it is far better to realize that until we can convert the two-years' course into a three-years' course it should remain a separate thing. But in the meantime there might be some connexion between the two-year Training Colleges and the Universities. Something to prepare the way for a closer union. University teachers from a neighbouring University might, wherever possible, take some part in the tuition of the Training College students, and I think there is a great deal to be said for the examination on which the certificate is given being conducted by the Universities rather than by the Board of Education. I think in those two ways, at any rate, there might be a connexion. Another point has not been mentioned. It is surely coming to be the almost universal opinion of those who have given any thought to the national system of education, that we must re-classify our schools; that instead of the purely parliamentary distinction into

elementary and "other than elementary" schools we want an educational distinction between the primary and the later stages of education. There is a real educational distinction between the teaching of children under, say, eleven and those over that age; and for children under eleven it is at least an open question whether for many years to come a two-year course of training might not be adequate for all practical purposes. Again, in all the best two-year Training Colleges a considerable number of students take the first part of their Degree—the ablest take the Final as well—within the two years, and it is surely most unwise to discourage these people from taking Degrees. Although I don't think the time has come when we can absorb the two-year Training Colleges into the University, I think it would be a great mistake to give up such connexion as exists at present.

Incidentally perhaps, I may say how refreshing it was to hear once more the voice of a complete disbeliever in the training of teachers. That speaker mentioned a point that we may well take as a test. He appealed to us who are engaged in the work of training to develop the personality of the teacher. You could not have a better acid test of the value of training than that. Does it develop the personality of the teacher or does it not? I quite agree with him that it is the test to which we must submit and that we stand self-condemned if it can be shown in any way that we impair by training the development of personality. I am always reminded, when I hear this point raised, of the Restoration play in which a certain Lord Foppington, when asked whether he had read a certain play of Shakespeare, replied: "No, I never read anything for fear of spoiling my originality." Why should it be assumed that there is any incompatibility between training and personality, which is originality?

That the training of teachers is the proper work of the Universities is to me no longer an open question. Is it not obvious that in a post-graduate system of training you must have teaching of University standard? And where else will you find this unless in the Universities? You may, indeed, create a Training College as a separate institution with teachers of University standard, but what would be the advantage when the necessary elements already exist in the University, and the University life may go on uninterrupted?

But there are two or three things the Universities must bear in mind if they mean to take up this question vigorously. In the first place, the professional training of teachers must be kept absolutely apart from their academic career. I have to pass the greater part of my time in trying to convince men that they cannot

teach a subject unless they know it. There is a most pernicious idea abroad that if a man has taken a poor Degree, that is, if he knows very little about his subject, all he has to do is to get a Diploma in teaching and at once become a first-rate schoolmaster. The art of teaching a subject you do not know is, I will not say an insoluble problem, but it is at least a problem which has not yet been solved.

Looking back upon a considerable number of years, I think the standard of academic attainment on the part of schoolmasters has very much gone down. Where thirty years ago you found a first-class man you now find a second-class man and where you found a second-class you now find a third-class. There are many reasons for this. The Board of Education, I am bound to say, is not, to my mind, entirely free from blame in the matter, although, in speaking of the Board of Education, I know that the fault does not really lie there. Behind the Board stands the Treasury, the real villain of the piece.

Many of the more important Honours Courses in this University take four years and the Board of Education will not pay grants to a student for more than three academic years, which means that a student, who is dependent upon grants from the Board, cannot take a full Honours Course in these subjects. It is hardly necessary to say that those courses are very carefully planned, as a whole, and you cannot truncate without impairing them. I hope that in time the Board will be able to overcome the resistance of the Treasury and give us a grant for the full four years' course. The second thing it is important to remember is, that the Universities cannot take up the training of teachers without the active and sympathetic co-operation of the secondary schools. I think they might be brought in a great deal more than they are. In this city we are hoping for a great deal of help from them in this way. Scattered about in these schools there are a certain number of first-rate teachers and our policy is to rope them in. We ask them to allow our students to come and watch their teaching, and we ask them, if they possibly can, to come and give us their help in the Training College by explaining to our students the principles which underlie their teaching.

Again, I cannot help feeling that we want something like what has been alluded to to-day, a special Degree for schoolmasters. And yet that is not exactly what I mean. I feel that the Universities of Oxford and Cambridge turn out too exclusively specialists in different branches of learning. What headmasters want is a man who can take at least two subjects well, and it ought to be possible to devise an Honours Course which would allow a man

to combine a knowledge of, say, History and English Literature, or a branch of Natural Science and one of the "Humanities." There are a number of people being turned out year after year from the Universities who are specialists in rather a narrow sphere. There is a very limited demand for such students in the schools. If we are to make it one of our duties, as I think we must, to turn out the best possible teachers for the schools, we must, I am sure, study the needs and conditions of the schools and adapt ourselves to them.

THURSDAY, JULY 7.—Afternoon Session.

CHAIRMAN.

THE RIGHT HON. SIR ROBERT STOUT, K.C.M.G., LL.D., CHANCELLOR OF THE UNIVERSITY OF NEW ZEALAND.

"University Finance."

Sixth Session.

The Chairman : I feel it a great honour and privilege to preside at this meeting of the Congress of the Universities of the Empire. The fact that we have met at this Second Congress in the home of the most ancient University in the Empire, proves that education is recognized as the most important issue before our people. The greatest need in a democracy is " Order and Progress." Without this democracy must fail, and " Order and Progress " can only be attained through education. In the struggles of humanity for higher ideals of social life, education has always been recognized as the means by which advancement and national progress have been secured. In the past education was considered to be dependent on societies—churches or others—or on individual effort and benefactions. This is not now the modern idea. It is now felt that education is a function of the State, and that it is the duty of the State to take charge of education, to provide for education, and to train its citizens. That is the view, at all events, in all the " Dominions " of the Motherland. In Canada, in Australia, in South Africa, in New Zealand, we find that every Government—it doesn't matter what political party may be in power—recognizes that it is the duty and the function of the State to provide for education. In our Motherland also this opinion is now becoming the fashion and the belief. There was a time when the function of the Government was only that of aiding education, and that to a small extent, with grants from the Privy Council. We have advanced a great way since that time. We have now Education Acts for England, and for Scotland, and we recognize it to be the duty of the State to provide not only for primary education, but for secondary and technical education, and to give great aid to Universities.

I find that in New Zealand we spent during the last year—I have the returns of 1919–20—£68,976 on University education. That includes grants from the State in money and grants from rents of reserves belonging to the State. More money is available and is spent on University education, as our University Colleges have other sources of income. Otago University has been very fortunate in receiving benefactions. It was in Otago that the first University was founded. It is to their credit that the people in this southern part of New Zealand had only been twenty-one years landed when they founded a University. They have got aid from outside sources, independent of what the Government has given them in annual grants and in lands set aside as University Reserves. Altogether, private donations

amounting to about a quarter of a million pounds, (subject at present to some life tenancies) have been given for University education by the Otago people. The number of students in New Zealand was during the past year 2,961, and the Government grant to them was £23·3 per student.

The grants for education made by the Government in New Zealand amounted during the past year to about two millions and a half. If the Government of the United Kingdom were to spend the same amount per head, the Chancellor of the Imperial Exchequer would have to set aside about 96 millions a year for education. I find it very difficult to ascertain the amount that is spent on education in the Homeland. I have not seen any books of statistics that give the total expenditure. There are rates and grants and benefactions, and many of your Universities, Oxford, Cambridge and Dublin, have endowments, the income from which is not stated in any public returns I have been able to find. I do not think, however, that the amount spent on education in the United Kingdom is at the rate per head of the New Zealand expenditure ; and though New Zealand is spending a large sum of money, it cannot be said to be money mis-spent. So far as a University career is concerned, it is open to any young New Zealander with ability and a desire for higher education. At all our University Colleges most of the classes meet in the evening—they begin at five and go on till ten. If there are special courses for Honours these classes meet in the daytime or on Saturday. The classes have been held in the evening so as to allow undergraduates who are at work during the day to attend. Perhaps two-thirds of our students, if not more, who are attending our University classes in the four towns of New Zealand where there are University Colleges, are earning their living. This is a mode of extending education to adults which you may have to consider when that subject is further considered by the people of this country. I notice that evening classes are now being held in a few Colleges in England.

We have next, in dealing with the finances of the Education Department, to consider the difficulty caused by the great war of finding sufficient money for Government expenditure. The increase of the National Debt has since the war began been enormous. In New Zealand it has been no less than about £75,000,000. The debt of the United Kingdom has also greatly increased. I learn from returns I have seen that the interest on what is called your " deadweight debt " now amounts to about £332,000,000. That is an enormous sum of money, and in dealing with the finances of the Universities, you have to remember

the burdens that the nation has to carry. I doubt if your people can stand much heavier taxation than they are now paying. You may have great financial difficulties in the future. You have competitors in industry, competitors in America and competitors in Europe, and if your taxation is increased you will not be able to maintain your ascendency as the greatest industrial nation in the world. We must, therefore, approach the consideration even of educational finance with care and caution. There is one point of view that must be kept in mind, and that is that if you desire economy you must specialize in education. You cannot expect each University to undertake to teach all the subjects required for professional and industrial training. This subject was dealt with in a very interesting lecture delivered by the Right Hon. H. A. L. Fisher a year or so ago in Oxford. In his lecture he pointed out that there must be specialization. He said, for example: "For some years past the Universities have been developing special lines of study suggested by local, by industrial, conditions, or to some extent by tradition or individual genius." He goes on to say: "Thus Liverpool has specialized in Tropical Medicine, Leeds in Textiles, Sheffield in Metallurgy, Cambridge and Reading in Agriculture, while Oxford remains *par excellence* our principal centre of classical studies." He further says that even the Government cannot allow the Universities to compete with each other and each University to insist upon teaching all subjects, and he adds: "I do not think that we can be altogether content to leave events to the blind play of competition, and I should be sorry if the deciding factor should rest with the Government." He urges the Universities' representatives to meet and determine what special Schools should be at one University, what special Schools at another, so that there may be no conflict and so that there may be less expenditure of money than if each University insisted upon having all the Schools necessary for education within its grasp. In New Zealand in 1886 we found that it was impossible for each University College to teach all the subjects necessary for University purposes, and that there must be specialization. We have our Medical School in Otago; we have our Engineering School at Christchurch; we have—though it has not been carried out to the same extent—the Law School in Wellington; and we have now in Auckland a School of Architecture, a small Mining School, and a School of Music. We have a special School of Agriculture near Christchurch. In this way we have tried to save our finances by not allowing each University College to attempt to carry on all the departments necessary for a complete University or a complete professional education. By specialization you will have to

attempt to utilise the funds open to you from the State for University purposes; but perhaps it may be said: "That is a matter for the Treasury, not for the University." Dr. Fisher has, however, pointed out that it is for the Universities to decide not to compete with each other, by each trying to start separate Schools, and in this way putting the country to great expense without any beneficial result. It may be said: "Can the finances of this United Kingdom stand further advances for University purposes?" That depends entirely upon what the people are prepared to do. There is great wealth in the United Kingdom. You know what an old German general long ago said—that he thought it would be the greatest thing possible to be able to loot London; and we know that some people think that the Treasury is a source of supply for all purposes and that it can never be depleted. This is not so. You, in England, are suffering now from heavy taxation, and you have to look after the destination of each penny so that there may be no waste. Seeing that you have an enormous burden of taxation, can you afford at the present time, with your strikes, with your suspended industries—can you afford, it may be asked, to spend any more money on education? It is not for us to say what the Government Treasury should do; but it is certain that you are spending a great deal of money on things which seem to me to profit not. For example, you spend no less than about £469,000 000 on alcohol. On all your "deadweight debts" you have to spend annually only £332,000,000. It is true that about £132,000,000 of that amount of £469,000,000 goes to the Treasury because there are Excise Duties and Custom Duties on alcohol. They amount in round numbers to £132,000,000, but if you take this sum from the whole £469,000,000 you will have sufficient money left to pay all the interest of your deadweight debt. Suppose you were to adopt the policy of the United States and become "dry." I can only point out that the people in the United States are very shrewd people, and you have to get up very early in the morning before you can succeed in competing with them. The people of the United States have thought fit to exercise great self-sacrifice. It is, as one American said, a "religious act"; it is, at all events, a "business act" they have done. They have chosen to give up alcohol. There would be no trouble in getting all the money required for education if you followed their example. You could even spend £96,000,000 a year on education without feeling any financial strain. If the Chancellor of the Exchequer finds a difficulty in providing finance for education why should he not consider whether the example set by America should not be followed by the United Kingdom?

I have pointed out to you what we have done in New Zealand. We may have to "take in sail." We are spending a great deal of money in connexion with our Schools, for we are looking after many things besides the imparting of primary instruction; we have now Doctors or Health Officials connected with all our Schools; we have also Dentists to look after the children's teeth; and thus we are attending to their physical health, as well as their intellectual developments and their moral training, all these things we consider necessary. There are perhaps difficulties in a new country that are not found in an old, though we have some advantages. So far as health is concerned, we are, the wealthiest country in the world. According to the Statistics a person at birth in New Zealand has a probability of living 59·2 years—that is, to nearly sixty years of age; while in the United Kingdom there is only a probability of living 51·5 years. We are nine years to the good compared with the United States. Their probability is 50·2. So far as long life is concerned, we are in advance of the world. The temperature of New Zealand is most suitable for the Nordic race. The average temperature is about 50° Fahr., which according to Huntington's New Book, "*Civilization and Climate*," is the ideal climate for the Nordic race. I think our soldiers showed that they were as stalwart as any soldiers in the war. There is no sign of decay in our race so far as New Zealand is concerned. You ought, however, to be our guides; we do not suggest that we can guide you. You ought to be showing your children—your kin beyond the seas—what is good for them. I hope that in dealing with this question of University finance you will not only take care not to depress your people by heavy taxation, but that you will show us that it is through self-sacrifice the race can advance, and that there are many ways in which that sacrifice may be exercised, which will not injure the race.

UNIVERSITY FINANCE.

First Paper.

It is curious that when this Congress met in 1912 there was no mention of University Finance. A stranger coming to the meetings and listening to discussions on all manner of other academic subjects might have supposed—if he thought about it at all—that the Universities were sustained in easy affluence by the gifts of remote founders or by the bounty of the State. Little could he suspect, as he watched the Vice-Chancellors riding their several hobbies with apparently light hearts, that behind each horseman there sat the shadow of a constant preoccupation. The sordid struggle to make both ends meet must have gone on then as now. But in these post-war days we are franker in our confessions of poverty, corporate as well as personal. The skeleton has been taken out of the cupboard; he sits naked and unashamed at every academic board. It would be uncivil as well as unwise to allow these conferences to pass without a word of greeting to a guest so conspicuous and so influential. The Committee of Vice-Chancellors has asked me to speak about University Finance. From such a body a request comes with the force of a command. To hear is to obey; but I wish they had selected a more willing victim—some one who felt he had a message. I have none, and it is to be feared that these remarks, while they will be platitudinous to those who are charged with the financial administration of a University, will be wholly without interest to those who are not.

In University Finance there are two separate problems, which may be distinguished as (1) the problem of the daily bread, and (2) the problem of the crisis. The first of these is the problem of adjusting recurrent expenses to recurrent income, in the ordinary running of a University. I use the word "recurrent" because its meaning is not likely to be misunderstood; but it is right to say that in the life of a University, as in that of other organic things, there is no strict recurrence. Hence in the problem of the daily bread we have to allow for irregular changes from one year to another. The number of mouths to be fed varies: their palates alter; there are changes too in the available supply. Often there is progressive expansion, it may be in the whole number of students, or in the number of subjects taught, or in the number of students taking a particular subject. Partly for that reason, and partly because many of the subjects are themselves progressive, the old

appliances for teaching and research become insufficient and even obsolete. Thus from time to time the other problem arises in the history of any University, when, after perhaps a long period of more or less steady activity and gradual growth, a crisis occurs. A new home, or at least a great enlargement of the old home, has to be arranged for. The hermit crab is obliged to seek another shell. For such a crisis the annual budget makes no provision. I have yet to find the University which builds up a reserve fund, as a submarine cable company builds up a reserve for the renewal of its cables, knowing that some day or other the crisis must come. Our poverty has made us opportunists; we live from hand to mouth. Probably we are right to concentrate on present efficiency—to take no thought for the morrow. If saving can be carried out only at the cost of usefulness we do well not to save. But when the problem of the crisis comes it is a very real one. I know its reality, for we have it now in Edinburgh in a form which could scarcely be more acute. In some sense it is a penalty of success; one may console oneself by reflecting that if the University had in effect been a hermit crab there would have been no need of a new shell. Faced with such a crisis, a distracted Vice-Chancellor looks eagerly to right and left, not knowing in what guise a beneficent providence will appear, whether as private donor or as Chancellor of the Exchequer. Probably both. One imagines that in the future some new University, designing a heraldic shield, will draw a typical Chancellor of the Exchequer and a typical private donor as the two supporters, and the motto will be Sir William McCormick's new reading of the *lex talionis*—"A Pound for a Pound."

I believe I am expressing a very general sentiment when I thank Sir William McCormick and his University Grants Committee for their sympathetic handling of a difficult task. It is a great achievement, on his part, to have gained and kept the confidence of the Universities in a relation which offered many possibilities of suspicion and resentment. At first the Universities were naturally timid of the bearers of gifts. They feared lest the grants might carry unacceptable conditions; lest purposes and details of outlay should be specified; lest the autonomy which they, quite rightly, regarded as a priceless possession should be curtailed. We lately heard an echo of such fears, when it was proposed to extend to Oxford and Cambridge the advantage enjoyed by their younger sisters. I was a member of Sir William McCormick's first Committee (since then I have, of course, passed from the bench to the dock), and I well remember an early conference with the Vice-Chancellors, headed by Sir Alfred

Hopkinson. There was a thick atmosphere of doubt that had to be dispelled. It was dispelled, and quickly. The University authorities soon saw that the distribution of the grants had been entrusted to understanding people who, like the cannibal king in the story, were University men themselves, aware of University sentiment, prepared to respect it, and even concerned to preserve it. They found that the grants were allocated *en bloc* and practically without conditions. In the period of my membership of the Committee, I can recall only one matter in respect of which pressure can be said to have been used. We introduced the Federated Superannuation System by making special *ad hoc* grants. So far as I remember, these were readily accepted by all the Universities then within the purview of the Committee; indeed, they were grateful for the Committee's initiative, and for the labour which was ungrudgingly given by the Chairman and by the late Sir Arthur Rucker in framing the scheme. The nature of that solitary exception is evidence that the Committee did not abuse its powers. Confidence in its administration of the grants was soon established, and that confidence is, I believe, still complete, though, save for the Chairman, the *personnel* of the Committee is changed, its powers are extended, and it is now entrusted, by the Treasury, with the distribution of a far larger sum.

As an old civil servant in a spending department, I have often felt, and perhaps sometimes said, hard things of the Treasury. It is all the more pleasant to congratulate them now—and I do it warmly—on the spirit that governs their relations with the Universities. We have to thank a succession of Chancellors of the Exchequer for recognizing, in augmented measure, the claims which the Universities have upon the State. We would wish the grants to be larger, but in the circumstances of the time they cannot be called ungenerous. They have in fact enabled the Universities to maintain a great national service. And nothing has been done to detract from the benefit by interfering with academic freedom on the part of the bodies which receive this official bounty. It is much to the credit of the officials of the Treasury that they have seen and avoided the unwisdom of anything like rigid control; that they have been content with a loose coupling between themselves and the Universities, a coupling characterized by much flexibility and unlikely to transmit shocks. In Sir William McCormick and his Committee they found an ideal spring-buffer, already in use; and they were wise enough to retain a mechanism the efficiency of which had been demonstrated by experiment.

In these days, when certain interests cry out for nationalization,

it may be useful to say plainly that the Universities do not join in that cry. In their judgment it would be disastrous if they were nationalized. They recognize that they have a national function, as the only centres, within the State, of the highest learning and research. This function will not be discharged aright unless their doors are open to all who are conspicuously fit to pursue the highest learning and research, no matter from what rank in life these persons may be drawn. The nation cannot afford to squander a pre-eminently valuable asset by neglecting the highest education of any person who *primâ facie* has in him the gift of discoverer, or inventor, or seer. From the point of view of the Universities, the national system of elementary and secondary education acts as a process of sifting; among the things it has to do is to select, and send on, those who show promise of becoming members of what must, under any conditions, be but a small band. Whatever criticism may be passed on the recent English and Scottish Education Acts (and there is room for a good deal), they will make it less likely that any of the gifted few will escape the net, and they will increase the part which the Universities of the country have to play in the higher education of the poor. Clearly it is in the interests of the State that University education should be accessible as well as of the best possible quality. There would be little to be said for Government grants were the Universities merely the resorts of the well-to-do. They are very far from being that; if they make a claim on the State they are proud to admit that they have a duty to the State. But they contend, and indeed it is not disputed, that it would defeat the purpose of their being were they brought, in any serious sense, under State control.

Among the less obvious merits of the University Grants Committee is its thirst for statistics. Thanks to this spirit of enquiry, each University obtains, in the published returns of the Committee, data for that kind of self-examination which springs, like the Pharisee's, from a comparison of its own state with that of others. To help me in preparing this paper, the Secretary of the Grants Committee very kindly let me see an advance proof of the printed "Returns" for 1919–20, which has now been issued as a Parliamentary paper. In it we have a most useful compendium of information about the Universities and other institutions in receipt of Treasury Grant. Mr. Riddell has also shown me the estimates of income and expenditure for 1920–21. For the purpose of attempting a rough comparison of various groups of Universities, in respect of finance, I have relied mainly on these estimates. Unfortunately the printed figures of income and

expenditure for 1919–20 do not relate to a whole year ; many of the Universities were changing over to the new dates between which the financial year of the future is to run. The estimates for 1920–21 do, of course, cover a complete period of twelve months, and, though they are only estimates, they relate to the session which is now ending. They probably represent the actual financial condition more closely than it would be represented by the accounts for the preceding year, had these been available, seeing that expenses rose largely between the year 1919–20 and the year 1920–21. As regards numbers of students, I have taken the published figures for 1919–20 ; they were the latest that could be had, and it is likely that in respect of numbers there is no very conspicuous difference between this year and last.

My object has been to obtain some notion of the cost of University education per head ; also how far that cost is made up of salaries to teachers, and of administrative charges ; and how far it is met by fees, by grants, and by the income from endowments.

By " per head " I mean per full-time student or his equivalent. In nearly all the Universities there are some " part-time " students. In estimating cost per head it would clearly be unfair either to ignore the part-time student, or to treat him as a whole-time student. Some part-time students,—those for example who attend only a single class—cost the University barely a third of what a full-time student costs ; others cost about one-half, and perhaps a few cost more. At a guess I have taken two-fifths as a probably fair average ; that is to say, I have added two-fifths of the number of part-time students to the actual number of whole-time students, in order to obtain a figure which I call the equivalent number of whole-time students ; and it is that number which has been taken in calculating costs per head, or items of income per head.

In reckoning the annual expenditure, I have been careful to deduct from the estimated total any item which is clearly capital expenditure met from income. Thus, taking the University with whose finances I am most familiar—Edinburgh—as an example, the total estimated expenditure for 1920–21 was £264,456, but from this a sum of £63,180 representing capital expenditure falls to be deducted, leaving £201,276 as the estimated current cost of working for the year. The number of full-time students in Edinburgh is returned as 4,182, and the number of part-time students as 308. The two-fifths rule converts this last number into 123, and gives 4,305 as the equivalent number of full-time students. Hence the cost per head, when worked out on the basis employed in this paper, is £46·8, or say £47. Again, as

another example, take Leeds, a smaller University, and one with many more part-time students. The estimated expenditure, which is £148,400, does not appear to include any capital item. The number of full-time students is 1,358, and of part-time students 733; the equivalent total is 1,651, making the cost per head £89·9, or say £90.

On proceeding to calculate in this manner the cost per head in the various Universities which are in receipt of Government grants, one is struck with the economic advantage of large-scale working. Edinburgh, which is the largest of the Universities, is also in this sense the cheapest, with its cost of £47 per head. Glasgow, which comes nearest it in point of numbers, with 3,826 students, runs it close with a cost of only about £48 per head. These figures are significant as practical demonstrations of the cost at which it is possible to provide a very varied and not unattractive bill of academic fare. I think they owe something to careful economies. Perhaps they also owe something to the hard fact that the income is exhausted when these figures are reached. No doubt Glasgow as well as Edinburgh would willingly pay the members of its staff more liberally and work them less hard, giving them more freedom for research, if it could. We should with great advantage spend more if there were more to spend. But these figures do show that large Universities, certainly without sacrificing their established reputation as centres of study and research, can be carried on at what, in comparison with others, is a small cost per head. In another member of the Scottish group, Aberdeen, the cost is only £55 per head, a remarkably low figure for a University with no more than 1,638 students. On the other hand, the amount spent by St. Andrews works out at £108 per head; this is high, not only because the total number of students in St. Andrews is small, but because that small number is divided between two establishments, north and south of the Tay, and many of the charges have consequently to be met twice over, more or less nearly.

So marked is the effect of size, when we come down to institutions with really small numbers of students, that for the purpose of comparing costs in the Universities of England, Scotland, Ireland, and Wales, I have ruled out all those institutions in which the number of full-time students is less than 900. We then have, as a fairly homogeneous group of modern English Universities outside of London, the following five: Liverpool, Manchester, Birmingham, Leeds, and Bristol. These I shall call the English group. For obvious reasons, Oxford and Cambridge are not included in this analysis. University College, London, and King's

College, London, make up what will be called the London group: Bedford College and East London College being excluded by the rule as to numbers. Similarly, in the Scottish group, St. Andrews is omitted, and we are left with Edinburgh, Glasgow, and Aberdeen. In the Irish group, Cork and Galway are omitted, and we have two institutions only, University College, Dublin, and Queen's University, Belfast. In the Welsh group, Bangor is omitted, and there are again two, the Colleges of Aberystwyth and Cardiff.

The results of these calculations are shown in Table I., and are summarized for the groups in Table II. They are shown, in each case, to the nearest pound; the data do not warrant closer figures.

Estimates of Expenditure and Income for 1920–21.

I.—*Grouped Institutions.*

	Equivalent Number of Full-time Students.	Total Cost per Head.	Cost in Teachers' Salaries and Superannuation per Head.	Cost of Administration per Head.	Income from Fees per Head.	Parliamentary Grants per Head.	Local Taxation Grants per Head.	Income from Endowments (excluding Scholarships) per Head.
Liverpool	2,356	£89	£45	£6	£29	£19	£7	£11
Manchester	1,931	79	41	9	32	25	3	15
Birmingham	1,827	72	34	6	25	24	8	5
Leeds	1,651	90	50	8	30	27	14	5
Bristol	948	90	46	12	25	24	14	6
English Group	8,713	£83	£43	£8	£29	£24	£9	£9
University College, London	1,956	£70	£35	£6	£32	£21	£3	£6
King's College, London	1,566	62	35	6	30	19	5	2
London Group	3,522	£66	£35	£6	£31	£20	£4	£4
Edinburgh	4,305	£47	£30	£5	£22	£13	£3	£8
Glasgow	3,826	48	25	4	22	13	2	7
Aberdeen	1,638	55	32	5	19	21	4	8
Scottish Group	9,769	£49	£28	£4	£21	£15	£3	£8
University College, Aberystwyth	1,070	£60	£30	£5	£16	£14	—	—
University College, Cardiff	941	59	29	8	21	23	—	—
Welsh Group	2,011	£59	£30	£6	£19	£18	—	—
University College, Dublin	1,293	£54	£32	£5	£16	£32	—	—
Queen's University, Belfast	1,046	61	32	6	18	25	—	£12
Irish Group	2,339	£57	£32	£6	£17	£29	—	—

II.—*Groups and Aggregate.*

	Equivalent Number of Full-time Students.	Estimated Expenditure.		Cost of Teachers' Salaries per Head.	Cost of Administration per Head.	Income from Fees per Head.	Parliamentary Grants per Head.
		Total.	Per Head.				
English Group .	8,713	£727,098	£83	£43	£8	£29	£24
London Group .	3,522	233,135	66	35	6	31	20
Scottish Group .	9,769	476,584	49	28	4	21	15
Welsh Group .	2,011	119,170	59	30	6	19	18
Irish Group .	2,339	134,125	57	32	6	17	29
Aggregate .	26,354	£1,690,112	£64	£34	£6	£25	£20

The five Universities of the English group, taken together, provide education for a number equivalent to 8,713 full-time students at a total estimated cost of £727,098, or £83 per head. Of this cost £43, or a little over one-half, is spent on the salaries and superannuation of teachers, and nearly £8 on administration: of the income, £29 comes from fees, namely tuition and examination fees together, £24 from Parliamentary grants, nearly £9 from local grants, and £9 from endowments.

The two Colleges of the London group provide for 3,522 students at an estimated cost of £233,135, or £66 per head. To this sum, however, it would be proper to add the cost of the services which the London University performs for students of these Colleges, which may I think be roughly estimated at about £5 per head. If that figure be taken, we have £71 as the cost per head of University education in the London group. Taking the finances of the Colleges alone, out of the expenditure of £66 per head, £35 is spent on teachers' salaries and superannuation, and nearly £6 on administration. Fees bring in £31, Parliamentary grants £20, local grants £4, and endowments a little more than £4.

Turning next to the Scottish group, the three Universities included in it provide for 9,769 students at an estimated cost of £476,584, or £49 per head. Of this cost, £28 goes in teachers' salaries and superannuation, and rather more than £4 in administration. Fees bring in £21, a figure which will soon be increased because, after these estimates were prepared, the Scottish Universities decided to increase the fees by substantial amounts, ranging from one-third to one-half. Parliamentary grants bring in barely £15, a figure which is conspicuously less for the Scottish group than for any other. This is doubtless a temporary condition; it perhaps arises from the fact that the Scottish Universities were later than others in coming within the Committee's allocation of grants. In Scotland no grants-in-aid are voted by local

authorities, but there is some relief of rates, and there is also a statutory distribution of a fixed sum of the nature of a local taxation grant, which amounts to nearly £3 per head. Endowments provide an income of £8 per head.

The two Colleges of the Welsh group provide for 2,011 students at a cost of £119,170, or £59 per head, of which £30 goes in teachers' salaries and superannuation, and £6 in administration. Fees bring in £19, and Parliamentary grants £18. At the time when these estimates were framed there was no provision of local grants.

Finally, the two institutions forming the Irish group provide for 2,339 students at a cost of £134,125, or £57 per head, of which £32 goes to teachers and nearly £6 to administration. The estimated income from fees is £17 per head, and from Parliamentary grants £29.

Taken together, the fourteen University institutions included in this survey provide for the equivalent of 26,354 full-time students at a cost, in round figures, of £1,690,000, or £64 per head. If, as was suggested above, we add, in respect of the London group, a proportion of the cost of London University, the cost per head comes more nearly to £65. We may, I think, take that figure—£65 per head—as fairly representing the present cost of providing University education in the British Isles, when small institutions and those that are highly specialised, like the London School of Economics or the Imperial College, are left out of account. Of that sum about £34 is spent on the salaries and the superannuation of the teaching staff, and £6 on administration. About £25 of it is paid by the student himself, in fees for teaching and examination, and £20 is provided in the form of Parliamentary grants.

On the whole it may be said that the problem of the daily bread has lost something of its urgency. The situation has been much relieved by the increase in Parliamentary grants and by the raising of fees. But the future is uncertain in several important particulars. The present flood of students must obviously subside; when the flood subsides, what will be the magnitude of the stream? No one can say; all that seems clear is that there will be a permanently greater demand for the most expensive kinds of University teaching, in the subjects, namely, of pure and applied science. Again, the present depreciation in the value of money is, one hopes and believes, temporary. If the purchasing power of the pound does not soon return to something nearer its old standard there must be a revision of salaries, especially those of professors.

In the stipends of professors there has, so far, been little increase;

like many other professional and salaried persons they have borne, patiently and silently, a large share of the financial burden of the war. For lecturers and assistants more has been done; that, indeed, was practically unavoidable. Apart from conditions which may prove temporary, it was generally recognized that the financial position of lecturers, especially in the higher grades, needed improvement. Their number is now so great, relatively to the number of possible professorial appointments, that the holding of a lectureship can no longer be treated as a probation, as a step towards a chair. It must be, for most lecturers, a position from which there is no advance, save to a higher grade in the hierarchy of the lecturers themselves. In the interests of the University the men who hold lectureships should have qualifications not much short of those of professors, and the scale of stipend payable to lecturers should be such as will attract men of that calibre. In Edinburgh we have recently instituted a class of Readers, to which some of the lecturers are promoted. Below that there are three grades of lecturers, each with automatic increments of salary; in the highest of the three the salary of a lecturer rises to £700.

Associated with the question of salaries is that of Superannuation. The Federated Scheme offers a satisfactory solution for nearly all persons who have joined the staff of a University since it was instituted. But for the older members of the staff whose service dates from an earlier period, a supplementary provision is necessary, and it is gratifying to know that this has been the subject of a special Treasury grant.

As regards what, at the beginning of this paper, was called the problem of the crisis, it is to be noted that several Universities have recently issued appeals for donations, and after much labour have collected sums which, though short of what was sought, are still considerable. Whatever assistance the Universities receive from the State, they must continue to rely largely on private benevolence, so long as they retain the independence that is justly prized. The pious founder will play at least as great a part in the future as in the past. We see him at work in America—in Canada as well as in the United States—on a scale that excites our admiring envy. It cannot be too often repeated nor too widely proclaimed, that we need him here just as much.

In this connection the proposal of the University Grants Committee to apply part of the half-million by which its resources were lately increased in giving capital grants will be welcomed by Universities whose immediate need is so pressing as to lead them to prefer a capital sum to an equivalent augmentation of the

annual grant. Though the size of any capital grants that can be made in this way is obviously limited, they may be very timely in contributing to ease the critical situation in which more than one University at present finds itself. The importance of providing capital grants, to assist in times of crisis, was urged when the wants of the Universities were stated to the Chancellor of the Exchequer in 1918. By its recent action the Grants Committee has taken an initial step in the direction then indicated, but it is evident that more must be done if the Universities are to serve their proper function in our system of national education.

J. A. EWING.

UNIVERSITY FINANCE.

Second Paper.

THIS year, for the first time, it is possible to enter upon a discussion of the Financial State of British Universities with adequate data at our disposal, and this, thanks to the labours of the University Grants Committee. Thanks to that body, the Universities have been persuaded to adopt, with exceptions that introduce little serious disturbance, a common University year, ending July 31st, and a uniform method of record of headings of income and expenditure. It is my good fortune, therefore, to open this discussion provided with figures that are comparable. To ease the mind of my hearers, let me assure them that I am not going to enter into minute detail. On the contrary, my endeavour will be to treat my subject in the broadest possible manner, dealing with what I may term "group phenomena," and striving to see whether from a consideration, not of one University, but of several, and not of one heading, but of groups of allied headings, we can arrive at conclusions of value.

Attempting this, there are, however, certain reservations to be made. Oxford and Cambridge Universities have thus far received no regular grant aid from the Government, and so make no returns to the University Grants Committee. Add to this that at the moment their financial state is under the consideration of a Royal Commission. The same lack of grant, and same lack of full and ordered returns to the Committee is true also of Trinity College, Dublin, and in part of the University of Durham. Add to this that the financial conditions of the three Universities first mentioned are for our purposes in so considerable a tangle that it is almost impossible to compare them with the Scottish or, again, with the younger English Universities.

While I give a table of the sources of income of the various London Colleges and professional schools, I propose, for simplicity's sake, to leave these out of consideration: they are not Universities, and individually are so diverse in nature, some being

attended in the main by technical rather than by matriculated University students, that they do not form a harmonious whole. It is noteworthy that London University proper, in the matter of both its income, mainly derived from examination fees, and its expenditure, forms an institution *sui generis*.

It is doubtful, also, whether the University Colleges should be treated on the same footing as the Universities proper, actively as are certain of these forging ahead, and approximating to University conditions and University standards. For this reason I leave them largely out of consideration.

I shall best place my matter before this Congress on a broad scale if I eliminate what I may term the special cases, and deal with those groups of Universities the members of which have like organizations and like objectives, Universities which are faced with like financial problems. I shall therefore deal in the main with the following groups :—(1) the English " civic " Universities : Birmingham, Bristol, Leeds, Liverpool, Manchester and Sheffield ; (2) the Scottish Universities : Aberdeen, Edinburgh, Glasgow and St. Andrews ; and (3) the Welsh University group of Aberystwyth, Bangor, Cardiff, and Swansea. It may be objected that I ought, as a fourth group, to include the group of Irish Universities, but their financial returns are made out differently, and I fear that as little edification is to be gained from a consideration of their finances as from other Irish matters at the present moment.

Income.

Surveying University history in Great Britain since the beginning of the century, the outstanding feature is the increasing recognition on the part of the Government of its duty to promote advanced education. Save in Scotland, State aid to the Universities was in 1900 practically negligible. In the last pre-War year, 1913–14, the annual grants to the Universities and Colleges of the United Kingdom had risen to £442,147, or close upon half a million pounds. In 1919–20, they had risen to over three-quarters of a million (£786,500), with in addition more than £300,000 in the form of special non-recurrent grants, or altogether well over one million pounds. The present year, we trust, will see another half million granted by Parliament to meet the immediate and most urgent needs of the Universities. I shall not enter here into the proposed method of allocation of this new grant. I will only say that this help is most necessary, and that we are correspondingly grateful.

Here, however, is a case for the application of the time-honoured

definition of gratitude; we hope that by recurrence of these grants and by realization of the value returned, our Government will acquire the habit of encouraging higher education by progressively increasing aid. We would not compare its expenditure upon the Universities with that of countries in which the Universities are State institutions. We are proud of our autonomy and absence of State control, and of our present possession of the right to develop ourselves not according to a common plan, but according to local needs and local opportunities. We dare not allow any one individual or corporation or the Government to possess, as it were, 51 per cent. of our stock. And in this view we believe we have the whole-hearted support of the Government. But much additional support can be granted to us by Parliament without nearly approaching the 50 per cent. limit, and that on the principle of granting help to those that help themselves.

Let us first consider the main headings of income of these three groups. That income may be classified as coming under five main heads, namely :—

(1) Parliamentary grants, Treasury and other.
(2) Grants from local authorities.
(3) Income from endowments.
(4) Income from fees, for tuition and examination respectively.
(5) Miscellaneous receipts (payment by Government and other authorities for work done in the laboratories, and other contributions for services rendered).

I am indebted to the University Grants Committee, and more particularly to the Assistant Secretary, Mr. Hetherington, for the figures of the accompanying tables of estimated income for this present year, 1920–1921.

The five classes of income above mentioned may, however, be reduced to three, namely :—

(1) That received from the student body.
(2) That received from Parliament.
(3) That due from local contributions, namely, grants from local authorities, and the endowments of local benefactors.

While I note their amounts, I am leaving out of consideration for the time being the " miscellaneous receipts." These are in the main payments for work done in testing and other laboratories. They may, it will be observed, as at Leeds, Sheffield and Swansea, and University College, London, represent very material contributions to the University income. But they are variables,

Estimated Income 1921–22.

	Fees.			Parliamentary Grants.			Local Aid.			Miscellaneous.	Grand Total.
	Tuition.	Examination.	Total.	Treasury.	Other.	Total.	Grants.	Endowments.	Total.		
	£	£	£	£	£	£	£	£	£	£	£
English Civic Universities.											
Birmingham	39,316	6,700	50,016	38,000	6,570	44,570	14,800	8,934	23,734	4,943	119,264
Bristol*	10,215	4,000	14,215	18,000	14,820	32,820	13,630	5,674	19,304	3,167	69,507
Leeds	44,000	5,600	49,500	36,000	9,000	45,000	22,500	8,500	31,000	11,900	137,500
Liverpool	65,004	3,000	68,004	43,000	1,563	44,563	17,750	26,037	43,787	5,422	161,776
Manchester*	53,700	9,000	62,700	43,000	4,950	47,950	6,650	29,700	36,350	687	147,687
Sheffield	22,840	2,800	25,640	23,000	5,880	28,880	28,800	5,360	34,160	12,521	101,201
			270,075			243,783			188,335		
Scottish Universities.											
Aberdeen	24,800	6,400	31,200	35,000	—	35,000	6,600	12,650	19,250	1,264	86,714
Edinburgh	75,000	20,260	95,260	58,000	—	58,000	10,800	36,600	47,400	3,586	204,246
Glasgow*	64,600	18,400	83,000	51,000	—	51,000	8,700	28,500	37,200	1,800	173,000
St. Andrews (and Dundee)	13,375	3,230	16,605	32,000	—	32,000	4,500	24,178	28,678	5,775	83,057
			226,165			176,000			132,528		
University of Wales.											
Aberystwyth	15,516	2,000	17,516	14,000	5,220	19,220	—	8,094	8,094	30	18,958
Bangor	7,760	980	8,740	14,000	9,200	23,200	500	1,700	2,200	650	9,155
Cardiff	18,900	1,174	20,074	18,000	3,382	21,382	3,122	1,277	4,399	664	8,833
Swansea	1,598	—	1,578	5,000	—	5,000	—	3,937	5,537	10,907	15,445
			47,908			68,702			20,230		

* Excluding College of Technology.

University Colleges.	Fees.			Parliamentary Grants.			Local Aid.			Miscellaneous.	Grand Total.
	Tuition.	Examination.	Total.	Treasury.	Other.	Total.	Grants.	Benefactions.	Total.		
	£	£	£	£	£	£	£	£	£	£	£
Independent:											
Nottingham	15,632	1,206	16,838	11,000	7,331	18,331	13,823	4,386	18,209	459	53,837
Reading	13,500	500	14,000	12,000	8,260	20,260	4,000	9,620	13,620	1,548	49,428
Southampton	7,598	200	7,798	5,000	4,850	9,850	6,709	632	7,341	—	24,990
			38,636			48,441			39,170		
London University:											
Bedford College	24,200	—	24,200	14,000	420	14,420	2,500	4,932	7,432	295	46,347
East London College	8,813	—	8,813	12,000	100	12,100	1,525	9,000	10,525	225	31,738
King's College	46,145	—	46,145	28,000	1,453	29,453	7,260	3,786	11,046	6,573	93,217
University College	62,250	—	62,250	42,000	—	42,000	6,425	11,615	18,040	10,543	132,833
Westfield	4,526	120	4,646	3,000	—	3,000	1,000	750	1,750	—	9,396
			146,054			100,973			48,793		
Colleges of Applied Science:											
Bristol University: Merchant Venturers	9,965	—	9,965	2,000	3,500	5,500	3,525	20	3,545	100	19,110
Durham University: Armstrong College	23,475	650	24,025	22,000	6,750	28,750	6,446	5,261	11,707	2,334	66,916
Glasgow University: Royal Technical College	17,000	400	17,400	4,000	18,000	22,000	8,179	3,000	11,179	4,360	54,939
London University: Imperial College of Science and Technology	50,109	—	50,109	55,000	13,310	63,310	20,262	13,750	34,012	1,425	153,856
Manchester University: College of Technology	22,000	150	22,150	8,000	12,000	20,000	3,300	—	3,300	11,956	57,406
			123,649			139,560			63,743		

and I am inclined to think should not be regarded as available for the general University funds.

If we compare the totals under these three headings for the three different groups we encounter certain rather striking dissimilarities.

We note, for example, that in the British group, although these are all civic Universities raised by local enthusiasm, the income received from endowments and from grants from local authorities is definitely below that received from parliamentary grants and from fees. These last two are approximately equal.

In the Scottish group, despite their centuries of existence, permitting, it would be thought, of progressive accumulation of endowments, this source of income is relatively low. It is true that Scotland herself is poor, but she prides herself on her education; her graduates have gone out into all lands, have made much money, and might have been expected to endow liberally the great Universities. As it is, Manchester, in little over sixty years (counting from the foundation of Owens College), has accumulated greater endowments than has Glasgow, while Liverpool, where University College dates from 1881, is only a little behind. It is of interest to note that in the Scottish Universities fees are the outstanding source of income, being definitely greater than the amount derived from Government grants. It deserves further note that, as indicated in the diagram, in Scotland there is already in action the consolidation of parliamentary grants of various orders into the hands of one authority, namely, the Treasury. This same movement is in active operation as regards England and Wales. It is expected that next year will show here also a notable consolidation, the Department of Agriculture, I understand, alone standing out and being unwilling that grants for the agricultural departments of Universities be administered separately from grants to Agricultural Colleges not under University direction.

Wales is poorest as regards both endowment income and aid from local authorities, and most dependent upon Government grants. These figures, however, represent the last year under the old state of affairs. Next year, with the coming into force of the local rate of a penny in the pound, will see the development of a practical equivalence between income received from Government grants and that received from local authorities and private beneficence. The amount received from the rates is expected to be £50,000. With income from local benefactions also taken into account, I understand that in the immediate future the two headings of Government and local aid will stand each at about £65,000.

What, however, stands out most prominently in these tables is that England, Scotland and Wales show one and all an amount of local aid, in the shape of grants from local authorities and income from benefactions, that is far below either the parliamentary grants or the income received from students. So that I would go so far as to say that the solution of the difficulties of University finance is to be found not in increasing fees (as a result of a strong suggestion from the late Chancellor of the Exchequer these have, indeed, during the last year been increased in the civic Universities to what personally I regard as their uppermost limit), nor in applying to the Government to meet a yet more considerable proportion of the cost of higher education, but in a united action on the part of the Universities to secure greater aid locally.

Never, I take it, have our Universities been conducted with greater care for economy than during the past year, but never has their deficit been so great. I see from the figures supplied me by Mr. Hetherington that the estimated deficit is altogether £210,435. Here, indeed, is a most suggestive set of facts.

		£
I.	Tuition and examination fees of twenty-one English Universities and Colleges (excluding Oxford and Cambridge) .	587,039
II.	Treasury and other parliamentary grants to the same	540,637
III.	Local authority grants and endowment income £350,916	
	Estimated deficit . . 210,435	
	———	561,351

Or otherwise the deficit in the working of the Universities would disappear were the local aid brought up to the level of the other two main sources of income.

The appeals made by most of the Universities during the last eighteen months have in themselves demonstrated that the Universities are fully alive, if not to the proposition that local support should be equivalent to Government support, at least, to the grave need of increased local support. They have not as a group been idle. Yet it has to be confessed that there could not have been a worse time than the present for such appeals and that the results obtained have been wholly inadequate. Add to this those appeals have resulted not so much in material increase of general University funds as in ear-marked donations for par-

ticular objects. The huge increase in the number of students has strained the accommodation of our Universities to the utmost, and most of the money thus obtained must be spent in expanding the University buildings and providing increased equipment in order to cope with the increase. We must in the main look, therefore, to grants from local authorities to provide increased general funds.

There is, in fact, a very definite policy indicated. These civic Universities serve not the city but the whole district in which they are situated. If they do not receive local support they ought not to expect further parliamentary help.

For many of us this is a hard saying. We know the difficulties in our path ; we have some experience already of the obdurateness of those who guard the finance of counties and provincial towns and of the difficulties that confront some of us, even, in stimulating the enthusiasm of the corporations of the cities in which our Universities are situated. Here, " as in private duty bound," let me exclude the Corporation of Liverpool.

But a beginning has been made. Thanks to the mingled patriotism and genuine interest in education of the Prime Minister, Wales has established a county rate for University purposes, and, as already stated, has secured the promise that Parliament will contribute pound for pound to the income so raised and to that obtained from local benefactions. Birmingham also has so appealed to Wolverhampton and the surrounding ring of great industrial towns that these are granting a halfpenny on the rates. Bristol is following suit, and reports encouraging results. This is clearly the line of policy to be pursued in the immediate future.

We ought to obtain at least one penny in the pound from the city in which the University is situated, and at least one half-penny in the pound from the other authorities, town and county, of the district served by the University. Where, as at district boundaries, a county or a town finds that it sends its promising students to either of two Universities, then the outcome of the rate should be divided between the two.

Or, briefly, we must take as our unit the sum total of money received from students, must from benefactions and local grants obtain an equal amount, and look to Parliament to contribute a like sum.

Let me repeat I hesitate to suggest that, save in strict proportion to the expansion of each individual University and University College, we should look to Parliament to supply any larger proportion of our income than that obtainable from fees. In the interest of the British University tradition we must protect our

autonomy, and for that reason must guard against giving Whitehall too great a claim to influence our individual development. The spirit of the present University Grants Committee could not be better or more sympathetic. Sir William McCormick and his colleagues are most anxious to leave to the Universities the full decision as to how the annual grants are to be spent. Nevertheless, as the Committee surveys most carefully the developments occurring in each of our bodies, and observes us from outside, it cannot but see where there are weaknesses, and naturally in its annual reports must suggest how these are to be met. It would be more than human were it not to give more favourable consideration to the claims of these bodies which respond freely to its suggestions, and if it did not feel that distributing such material aid its suggestions ought to be acted upon. I do not want to dwell upon this. I would merely suggest that the autonomy of the Universities would be more secure if in place of the University Grants Committee being empowered to allot grants, whether recurrent or non-recurrent, according to their recognition of the need, there were established a fixed ratio, so that a University could be assured that, granted its income from fees were a given sum, it could obtain a definite equal grant from the Treasury. Such recurrent grant would, of course, be separate from other special grants made through the Treasury for special work conducted on behalf of one or other Ministry.

Expenditure.

When we come to survey University expenditure we encounter what at first sight is a most ominous state of affairs. Never has there been exercised a more strict economy than during these last two years. The method of administration makes indeed for economy: local committees, containing upon their body those who have actually contributed to the funds of the institution, or their representatives, and the representatives of the local authorities, weigh most carefully the purchasing power of the sum at their disposal, and lay out the money to the best advantage. They are far more efficient than can be a central or metropolitan bureaucratic control. And yet, despite their care, such are the impelling circumstances that expenditure has increased by leaps and bounds, and there is not a University, save possibly the central University corporation of London—and that must be excluded from comparison—but is faced with a heavy deficit.

Believing that the greatest care has been expended, I am not going into detail as to the relative sums expended under various

headings by the different bodies; rather I would pass in rapid review over the main causes of the increase, observing whether these are to be regarded as temporary or permanent.

Stipends.—And first, as constituting the largest increment in the annual expenditure, must be mentioned the salaries of the staff. In my own University the staff stipends in 1921 are many thousands more than the total expenditure of the University in 1913–14—a most portentous, and yet, I am compelled from every consideration to state, an inevitable increase; one which did not take place until most of the teaching body had been compelled to trench upon what capital they possessed or seriously to overdraw their accounts at the bank, or both. It is unnecessary, before this audience, to dilate upon the anxieties and agonies of the eighteen months succeeding the Armistice—upon the way in which the cost of living soared and coincidently, what with increased rates and taxes, the means of meeting those costs diminished in like ratio. To many those months remain a ghastly dream, and worse than a dream, for there are permanent after-effects. And when, at last, firemen and other union employees of the Universities received larger wages than did demonstrators and junior lecturers, action had to be taken, even at the risk of running up heavy deficits. We were able to impress upon the Government that by their augmentation of the salaries of elementary school teachers, these were, many of them, receiving more than were men of high scholarship, graduates of distinction engaged in higher education, and, as a result of our appeal, the Chancellor of the Exchequer came to our aid.

As a result, all British Universities have raised the stipends of their teaching staff very materially, and some, at least, of the burden of existence has been taken from the shoulders of that staff, even though not a little still remains to be done.

An interim Committee of the Association of University Teachers, with Sir Michael Sadler as Chairman, has, within the last few weeks, reviewed the general position in the Universities of the country in this matter of stipends. Its findings are most instructive. They are in no sense extremist, and I shall venture to quote freely from its memorandum.

" Since the principle of graded salaries with increments has now been adopted in nearly the whole field of public education, the Universities are constrained to bring their arrangements into greater harmony with prevailing practice. A young man in choosing his career rightly expects to know to what this career may lead. He cannot be blamed if he shrinks from entering a *cul-de-sac*. . . . The emolument of a man holding such a (Uni-

versity) position with credit to the institution which he serves should give him the means of living a scholar's life and of fulfilling the duties of his station. . . . "

The following scales of minimum salary are proposed for the several groups of full-time University teachers.

(*a*) Division III.—Assistants on probation, with proposed minimum salaries of £300 for the first two years and £350 for the third.

(*b*) Division II.—Lecturers, beginning at £400 and rising by increments of £25 to £650 per annum. The increment to be annual under normal conditions, but to be granted only for effective discharge of duties and advancing efficiency of service, the institution being free to increase or accelerate the annual increment.

(*c*) Division I.—Teachers, other than Professors, of conspicuous merit or holding posts of special responsibility, a group comparatively small in number, receiving between £700 and £900.

(*d*) Professors, £900 or £1,000.

No annual increments are proposed for (*c*) or (*d*): the salary paid to a Professor beyond the suggested minimum to depend on eminence of service, degree of responsibility, scope of the department and resources of the institution.

Such basic minima, if adopted, would unify the University service, and would remove discrepancies which now give rise to a sense of grievance.

I am the more inclined to quote these recommendations since they correspond very closely with, and save in one item are somewhat below the scale adopted by my own University. We have striven to do that which is fair to our staff, but at the same time know that we have not erred on the side of excess. But not all civic Universities and Colleges of University rank have thus far been able to reach this standard: indeed, to gain it, the Interim Committee points out that to bring up the salaries of 382 Professors to £1,000 will need an additional £83,475, or if only to £900, an additional sum of £52,000. It concludes, further, that giving Professors a minimum of £900, and not of £1,000, a total of just about a third of a million pounds is required annually to satisfy the minimum standard laid down by it for all grades. They take into account 1,815 full-time teachers at the civic Universities and University and Technical Colleges receiving grants from the Government (excluding Scotland and Ireland), making no allowance for increase in this number, nor for increase in the salaries

of Professors which are presently at or above the minimum. Thus :

	£
Professors (minimum £900) . . .	52,403
Assistant Professors and Readers .	201,483
Assistant Lecturers and Demonstrators .	79,816
	£333,702

Certain criticisms may be directed against this scheme. It may, for example, be asked whether the standards for the University Colleges situated in country towns should be as high as those for complete Universities situated in large centres of populations, in which the cost of existence is materially increased, and on these same lines whether, taking everything into consideration (including previous standards of stipend), Professors and Lecturers at Aberystwyth, Bangor and the other constituents of the University of Wales need, in order to maintain their status, salaries equal to those of Professors and Lecturers at Manchester, Leeds, and Liverpool. Into these matters I cannot enter. The point is that, in the opinion of the teaching body, great as has been the increase in expenditure upon stipends during the last two years, it is yet very considerably below what is necessary in order that those engaged in University work may carry on that work on stipends that are not too exiguous for reasonable and modest existence untrammelled by constant anxieties about finance.

Superannuation.—Closely associated with salaries is the item of superannuation expenses. By Mr. Fisher's Act the Government assumes the whole burden of superannuating the teachers of primary and secondary schools, and these are not called upon to make any annual contribution to the Pensions Fund. By the Universities Superannuation Scheme at present in vogue each member of the staff is insured in one of a selected number of companies, and the annual premium is met in part by the individual, in part by the University or University College. Two serious objections have been brought forward, the one that by the existence of these absolutely different systems a wide gulf is erected between school and University teachers, rendering it impossible on account of loss of pension for a schoolmaster of standing to accept any position in the University ; the other, that both during the active years of his life as a teacher, and also when he is superannuated, the man of higher degree and higher educa-

tional status receives the less favourable treatment, and financially is placed at a disadvantage. But the recommendation that the Universities be placed upon the same footing as the State-aided schools, when placed last year before Mr. Austen Chamberlain, as Chancellor of the Exchequer, received scant consideration. He pointed out that already he had dealt more generously with the Universities than had any of his predecessors, that for the Government to take over the superannuation of University staffs would saddle them with an additional expenditure which he dare not contemplate at the present time, that by becoming Government annuitants, the University staff would declare themselves Government servants, a step contrary to the British University tradition and subversive of freedom of thought and action; while, lastly, he pointed out that the Universities themselves had not done all in their power to obtain increased funds for this and other purposes from other sources. He counselled a material rise in students' fees.

There, at present, the matter rests, but obviously it cannot rest indefinitely. Granted that we accept Mr. Chamberlain's argument as to the impolicy of converting University Professors and Lecturers into public servants, we cannot allow this rift between the Universities and the schools to continue. It must be rendered possible for school teachers of distinction to be freely eligible for University Chairs and *vice versâ*; some method must be discovered whereby years spent in the one service are duly recognized in the other for pension purposes.

Here, in passing, it is proper that at this Congress of the Universities of the Empire, attention should be drawn to a like want of co-ordination in the matter of superannuation between the Universities of Great Britain and those of the Dominions and, I may add, of the United States. There is to-day a widespread agreement that, if only for the improvement of the relationships between English-speaking countries, every encouragement should be given to the appointment to Chairs and other University positions of those from Overseas Universities. Here in Oxford I need but quote the name of the late Regius Professor of Medicine —Sir William Osler—to recall the singular and great benefits that may ensue. And he is by no means your only example. Similarly each year there is a small stream of British University men passing to the Universities of the Dominions, and of the States, to take up Professorships. I can speak with some knowledge of conditions in the United States and Canada. There the Universities owe the establishment of a common pensions scheme to the princely generosity of the late Andrew Carnegie, who gave over to trustees

a sum of several million dollars for this purpose. The system is non-contributory, and at first did not include State Universities. At that period the funds at the disposal of the trustees were ample. But with the inclusion of the State Universities it has become doubtful whether the capital is adequate, and of necessity the conditions under which a Professor becomes eligible have been rendered more stringent—the years of service have been lengthened, and the age at which a man becomes eligible for a Carnegie pension has been raised by several years.

With great liberality the years spent as a recognized teacher in a foreign University are included as counting towards a Carnegie pension, but if, on the other hand, as in my own case, after long years spent in North America, an American or Canadian Professor is called to take up a University position in the British Isles, he receives no pension and no proportional contribution to the pension scheme of the University which he joins. One would imagine that in such a case the University which he had served, having accepted the provisions of the Carnegie Fund, had simultaneously implicitly accepted the principle of professorial pensions, and thus would hold itself in duty bound to contribute towards the superannuation when that did not come within the scope of the Carnegie regulations. The Governors of at least one foremost Canadian University deny that any such responsibility is theirs.

It is right that at a time when the principle of University pensions is universally accepted, these facts should be generally known. Those who are attracted by University posts in Canada or the United States should be warned that under present conditions, if after a quarter of a century or more of whole-hearted devotion to the interests of a University in the new world they return to take up University work in their native land, they cannot expect to receive any consideration.

If there is to be free intercourse of Professors and Lecturers between Great Britain and North America and the Dominions, this state of affairs cannot be permitted to continue. It is a matter that may well be considered by this Congress.

It is clear that these two headings of expenditure are not likely to be lessened in the near future : they must continue raised until such time as the salaries of primary and secondary teachers undergo material diminution, that is to say, until the cost of living shows itself in the neighbourhood of the pre-war level.

Departmental Maintenance.—The next heaviest items are grouped under the headings of Departmental Maintenance and Administration respectively. Under the former are included the wages of laboratory servants, grants for apparatus, repairs and

fittings, heat, light, power and water, rates and taxes. All of these have undergone a grave increase since the Armistice. Wages, for example, have risen over 150 per cent.—an increase proportionate to the advance in the cost of living: not only has the price of apparatus and of chemicals, when these have been procurable, soared to an appalling extent, but the remarkable increase in every University in those taking scientific courses has necessitated an increased purchase. Notwithstanding a most parsimonious policy, I see that in Liverpool this one item of grants for apparatus, material, etc., has risen more than 200 per cent. over pre-war cost (from £7,900 to £16,500 in 1919–20 and £19,000 in 1921–22).

The expenditure upon repairs and fittings has risen to an even greater extent. The enforced curtailment upon painting, plumbing and other reparative processes during the war has in part been responsible for the rise, but of greater importance has been the temporary expansion of laboratories rendered necessary by the vast increase in the number of students. I imagine that other Universities will have found themselves in the same difficulty as has Liverpool, the difficulty, namely, of deciding whether the cost of temporary buildings, army huts and the like—buildings which can at most last some five years—should be charged to capital or to current expenses. On surveying the charges, running up into many thousands, caused by this temporary expansion, I cannot but be impressed by the fact that if the University had not in its patriotism opened its doors freely to ex-service students, this expansion, at a time of excessive cost of material, would not have been urgent; we could have waited and put up permanent buildings at a period when material and work was much lower in price; or, in other words, these heavy expenses have been incurred in response to the request of the Government, that we should help towards a profession those who had served their country, and while they have been incurred very willingly, nevertheless the expense may well be balanced against the extra Government grant received. So far as I can gather, they have been overlooked. But they have been a heavy item of expense. At Liverpool, including these temporary expansions, repairs and fittings rose from some £2,000 in 1913–14 to £28,000 in 1919–20 and £15,000 in the present year. Here, happily, is an expense which must decrease materially in the years immediately before us. As regards the increased cost of light, heat and power, and of rates and taxes, we can look to no very immediate relief.

Administration.—Lastly, coming to administrative expenses, which, in the case of my own University, have risen some 85 per

cent. since the war, the main increase has been due to salaries of the office staff, which to-day almost equal the total cost of pre-war administration. These salaries have, I need scarcely point out, risen to a proportionately greater extent than have the stipends of the teaching staff, seeing that they have been more sensitive to the rise in the cost of living and of wages in other clerical pursuits. While some diminution in the salaries is to be expected in the future, this is likely to be balanced by an increase in the administrative staff of Universities, demanded by the increase in the number of students, and by the steadily advancing demand from many sources, governmental and otherwise, for prompt and abundant returns of various orders. In this respect the modern University reminds me vividly of the hospital unit during the war in the calls that came pouring in upon the Registrar and his staff. There appears to be no immediate likelihood of a reduction in the cost of advertising, printing, stationery, postage and telephone

In conclusion, passing in review both income and expenditure, I am led to certain possibly somewhat unpalatable conclusions concerning "civic" Universities, as distinct from what *The Times* calls the "rural" Universities of Oxford and Cambridge.

(1) In order to conduct our Universities and University Colleges in a manner that is financially satisfactory, there must be a system of payment by results.

(2) This must be based primarily upon the fees received from the student constituency. The greater the number of students that a University institution can attract, and the larger the income from fees, the greater the call that the institution should be able to make upon the Government in the first place, upon local beneficence and the local authorities in the other.

(3) The Government in its turn is wholly justified in declaring that its contribution shall be dependent upon and equivalent to that from local sources. If a University or University College cannot secure adequate local support, that in itself must be taken as a sign that it is not sufficiently in touch with the needs of its constituency; that it is expending money along lines which do not appeal to that constituency, or that it has failed to convince the district as to the wisdom of its course; in which case it, and not the Government, must be held responsible, and retrenchment and suppression of departments must be undertaken.

(4) Under present conditions expansion and the development of new departments can only be entered upon in response to local

needs and with the assurance of adequate local support, unless or until such time as the income from fees is definitely in excess of the Government grant. Then, provided the University staff is adequately paid, the University or University Institute is justified in expansion for the advance of knowledge irrespective of local demand.

(5) The adequate payment of the University staff is a first call upon University funds. It is essential that there shall be a minimum stipend for all entering upon the life-work of a University teacher, and with this a reasonable prospect of progressive advance, so that a man entering can contemplate the eventual possession of an income compatible with the possession of a respected status in society, and the due fulfilment of his duties as a citizen and head of a family. It has not, however, been shown, in my opinion, that upon reaching the higher ranks in the profession the minimum stipend for a professor should be the same in small and large Universities, in Universities and in University Colleges. In other words, the minimum for a professor may vary as to local costs, the standing of the University institution, and the available income of the same.

(6) It is a matter of general experience in British and British-speaking Universities that the higher and the better the training given, the more are students attracted to an institution. It is to the interests of any University to pay more than the minimum to its best teachers and to retain them. It is a better policy to establish a relatively low minimum for any grade in the teaching profession, and freely to raise the stipends of effective teachers, than to establish a high minimum and hesitate to promote above this minimum.

Time has prevented me from entering upon the thorny subject of the development and financing of residential colleges and hostels and the responsibility of the central University authority for the same. I can only in passing state that increasingly the civic Universities are recognizing that for their development along the best lines they must undertake this responsibility and shoulder thus an increasing financial burden.

So, too, I have thought it wiser to leave to representatives of the Dominion Universities to place before the Congress at first hand their own views regarding University finance, realizing that local conditions so materially alter the problems and the methods of solution, that it is unwise to venture to apply to the Universities overseas the conclusions reached from a study of the home institutions.

GEORGE ADAMI.

Discussion.

HUGH R. RATHBONE, M.A. (Liverpool): I don't think, sir, I have very much to add to the exhaustive paper of the Vice-Chancellor, but I should rather like to emphasize the point he threw out towards the end of his remarks, and that is, that not only would it be good economy for the nation, but a great benefit for the Universities of the country that some rebate of taxation should be made off the donations of those who support the Universities. Various plans have been thought of, and perhaps it is hardly the occasion to go into concrete suggestions, but it is perfectly obvious that from the purely economical point of view the Universities will cost a great deal less to the nation if they are run on their present lines rather than if they are taken over by either local or national authorities. Apart from the economy, I think it has been laid down by the former Chancellor of the Exchequer and by all authorities on education, including the present President of the Board of Education, that it is pre-eminently desirable that the different localities which are big enough should develop their educational systems on their own lines as far as may be, with due regard to efficiency and the maintenance of proper standards. Therefore, on all grounds I do think that the Universities should continue to be run on the present autonomous lines. Consequently, it is undesirable that they should be too much beholden to Imperial or local grants. If a large portion of the deficit that the Vice-Chancellor of Liverpool has referred to is to be made up by private munificence, the only chance is that the Government introduce some system by which those who contribute, either for a period of years or by capital or otherwise, to their Universities, should be exempt from the heavy taxation which exists. Some people, for instance, will be able to point out that with income tax, super tax, corporation tax, etc., a rich man is probably paying in taxes about 16*s.* in the pound. My view is that it is comparatively simple to evolve a plan by which all donations to Universities—I have no doubt that the same suggestion might be made with regard to hospitals—which have passed muster, either by the Minister of Education or by some other authority or body of sufficient standing, that all donations or subscriptions to such institutions should be free not only from income tax, but super tax. I have contrived a means of my own for doing it. Somerset House has agreed in some cases, but I am having a fight on others; but I may say that one or two people, including Sir William McCormick, who was during the war very anxious to try to arrange that donations to Universities should be free from Excess

Profits Tax, said he thought my scheme would act, and it was the only one he had seen that would act. I believe that the exemption from taxation of donations to Universities would give a great impetus to private munificence. Since the Oxford Conference, the Somerset House Authorities have given way in all cases, and have authorized the refunding of income tax. It is a tremendous advantage to the city and University that there should be a large measure of local private support; it gives an inducement to men who have no other hobby but their own business to take up the hobby which is, perhaps, the most engrossing of all—of seeing a big institution like the University grow during their lifetime—partly from help given by themselves.

E. G. ARNOLD (Leeds): The man who speaks in the fourth place is in the happy position of having had to blue-pencil much of what he was going to say, an action on his part by no means devoid of benefit to the audience. Upon an occasion like this, repetition is an additional deadly sin, and, in order to avoid anything of the kind, I will confine what I am going to say to the effect that the present state of University finance has upon the staff. Now the efficiency of the University's work depends first and foremost on the quality, the spirit and the adequacy of the staff. Suitablility of buildings and equipment, while essential and important, must take second place; and, in spite of a generally low rate of remuneration in the past, there can be no two opinions as to the high quality of the staffs: but with the increasing demands of the *Schools* for highly qualified teachers, to whom good salaries and pensions are offered, it is too much to expect that the Universities can get men and women they want without a complete revision of the rates of salary and prospects of their staffs, and, therefore, when considering the present financial position of the Universities, it is necessary to budget for increases in that direction. Most of the Universities have deficits on their accounts this year, but these deficits suggest a financial condition much more satisfactory than is really the case, because the accounts are made up on a rate of remuneration which must necessarily be raised, and to bring the salaries of the English and Welsh Universities up to a suitable level will involve the annual expenditure of an amount not far short of half a million. It is doubtful also whether the staffing of the Universities is generally on a sufficiently important scale to provide for the tutorial guidance of students, and the opportunities for private research and reading by the staff which are so essentially necessary if the advancement of knowledge is to be maintained, and, therefore, the

possibility of having to correct under-staffing must also be kept in mind. In order to deal with the salary question a University must be able to assure itself as to its future income, for an increase of salary is not given for one year only, unless by the unsatisfactory expedient of the bonus system. It is not sufficient to satisfy ourselves that a higher salary can be paid this year or next year; we must be able to assure ourselves that we can pay it five or six years hence. The non-recurrent grants given by the Treasury during the past two years have been of immense value in making possible extended accommodation, but such grants from their non-recurrence provide no solution of the salary question. The other sources of income of the Universities, though theoretically subject to various contingencies, are found to be fairly reliable, and regarding generally the sources of the income there is undoubtedly safety in number of sources, as at present. Although the newer Universities have received subsidies from public authorities, they have been remarkably free from interference in educational arrangements, and we feel immensely grateful for the broad-minded attitude of the Government departments and the local authorities in that connexion. But—and this should be remembered when nationalization is under consideration—we must also recognize that that position would not have been the same had a predominant part of the income been received from any one single authority, as, in such circumstances, such authority would inevitably have acquired, whether deliberately or not, a more or less controlling influence over the University policy, and, however well-intentioned, such influence must, in the long run, have a bad effect. The finances of the Universities of England and Wales rest on what one may describe as a three-legged stool:—

(*a*) Endowments, subscriptions and students' fees—53 per cent. of the whole;
(*b*) Grants from the Treasury and various Government Departments—36 per cent.;
(*c*) Grants from various local educational authorities—11 per cent.

Endowments, grants, subscriptions, have made it possible to provide University education at a charge very much below its actual cost, and this has opened the door to a great many students who had no scholarship. It is for the good of the country to maintain this as far as possible, but this policy must not be carried to the extent of limiting the work of the University, and it is better to raise the fees than to allow the University to be starved.

When all other sources of revenue have been expended so far as the Government, the local authorities and private subscribers can go, it is then incumbent upon the Universities to make up the balance by adjusting the fees on an economic basis; and, by the look of the published figures, many Universities, particularly the newer ones, will have to do so, if not this year, probably next. It would be a great help in obviating any such decision if further income could be obtained from the local authorities, for many of them pay nothing whatever for the accommodation of the students that come from their area—a most unsatisfactory state of things; and it is understood some excellent work has been done in this direction in the West of England quite recently, a penny rate having been received from three substantial counties.

One thing is certain, and it is that those who have accepted responsibility on behalf of the Universities, the office bearers, the members of Council, the members of Committees, on them the responsibility rests of exploring every avenue, of opening every door they can find, of turning over every stone they can see, in their efforts to obtain increasing revenue in order that the staffs, and particularly the staffs of the second and third rank, can be paid salaries higher and better than those of a skilled artizan.

PRESIDENT SIR ROBERT A. FALCONER, D.LITT. (Toronto): One remark in Dr. Adami's very interesting address led me to think that he must have had an experience very different from what I have met with in Canada in the fourteen years I have been connected with a State or Provincial University. He seemed to deprecate the influence of nationalization upon University freedom and he spoke of some University or College—I cannot imagine what one it was—in which the acceptance of Government money was conditioned by the requirement that 80 per cent. of those who were appointed to the staff should be native born. What University that is, I don't know. In fourteen years in the University of Toronto, during which time I have had to do all the nominating to the staff, I have not received one suggestion to that effect. I suppose that 30 to 40 per cent. of our higher positions are held by people from the Universities of the Old Country, and we are very grateful to those who come to us. Probably my experience might be paralleled easily by President Tory and President Murray who are here. Certainly I have not discovered the danger in nationalization that some people in this audience seem to fear. With us a Board of Governors is appointed by the Government as a Commission: that Board of Governors consists of the most outstanding men of the community who can be

obtained; the Chief Justice is our Chancellor—I shan't give you the list of names—but our experience is paralleled in the other Provinces of the Dominion. The Board of Governors is independent; it presents its budget to the Government every year, and where a deficit has to be met, it is met by the Government on general matters of policy and expenditure, not on detail; and we have perfect freedom in the appointment of our staff and in the distribution of our funds. I can say that nationalization, as far as it concerns the Province of Ontario, is a success. Of course, different countries have different conditions which determine the way in which their own systems work out, but the danger of limitation of freedom—of academic freedom—from a Government as it is to-day in the Provinces of Canada, I think, is very small. I find that there is probably on the other side of the Atlantic quite as much danger from private benefactors determining policies as from the Government. When economic conditions arise, as they are arising to-day, and when wealthy men are giving lavishly to Universities, those in charge have to be on their guard lest persons who are appointed to the staff should not walk a straight path. Benefactions to Universities are often given with conditions which involve other expenditures as well as some oversight. The conditions of national grants in Britain, are different from those under which we live, but I am confident that if we are to have a development at all commensurate with the needs of growing countries, we have got beyond the point where it is possible to cope with it by private endowments and gifts. The Government must stand behind the Universities and the people must be taught, as they will learn with the increasing burden of Government, that it is safe to trust competent boards to conduct one branch of public education. If the right men are chosen to conduct these affairs without party bias, as they have been in my experience, and I think I can speak for my colleagues, they will not be interfered with on political grounds, and the Professor will live in an atmosphere which is as academically free as in any endowed Universities in so far as I am acquainted with them.

L. R. FARNELL, LITT.D. (Oxford): It is so late that I feel diffident in prolonging the discussion at all, especially as a great many of the points that I had thought of addressing you on have been very well anticipated by former speakers with nearly all of whom I agree; and you could not expect me, even if it had been my function and there was plenty of time, to tell you anything about the finances of our own University, for they are so very complex and difficult to explain, that I should want at least

three hours and should probably give a very misleading account of them.

Many of the things that have been said, unfortunately or fortunately, do not apply to us. We are not dependent on the three legs. One of the legs is missing. You all spoke as if local support was an actual source of income. We here never have had since the Middle Ages, never shall have, any local support. We are not a local University at all. That is a curious feature of the history of Oxford. The other curious fact is that we seem to be endowed with an amazing wealth and yet in the midst of that for certain purposes we are almost poverty-stricken. We could be rich beyond the dreams of academic avarice if we chose to sell our treasures. No University in the world has such treasures as Oxford; imagine what would accrue if we realized the money value of the Ashmolean and the Bodleian. We glory in these things, but they are a heavy drain on our finances. Whatever happens to most of you, we have our own big problems and I do not think it would be worth while my dwelling upon them. One mode of dealing with this great and pressing matter has only just been glanced at in the opening remarks of our distinguished Chairman of this afternoon—but I think it is one of the most pressing, and I am sorry it was not made a separate subject of discussion at our Congress this week, and I very much hope to see a strong and powerful academic committee soon meeting to discuss it—and that is the partition of functions among the various Universities, the distribution of subjects that each University can undertake, because if we were ever so well endowed, if we were the richest University in the world, we could not possibly now adequately represent every subject of modern study. And if that is true of us, how much truer it must be of some of the new and struggling Universities in other parts of our Islands! Now, this question of the specialization of subjects eminently concerns finance, and when the Government comes to our aid—and in spite of dangers I trust they will—that will be an urgent question they will no doubt put upon us. Can you teach everything? Ought you to teach everything? Must there not be some distribution of functions, not only as between the old Universities and the new, but between the one or two old Universities and many of the new? And upon what lines shall that proceed? It sounds so easy to say: "We will be wholly Physical Science, wholly Humanistic," but think how much your students in Humanistic matters suffer if they have no kind of atmosphere from Physical Science, and how much your students over there suffer if the whole of their atmosphere is devoted to

Physical Science without any tincture of letters. Therefore, certain broad bases of common teaching must be accepted even though we wish to apply the principle of specialization, as undoubtedly we do. How it will proceed is a matter for very careful deliberation of, I think, a powerful University Committee. I can easily imagine lines of distinction. We might say: "We will all teach certain branches of Science, certain branches of letters, but we will not all teach—for instance—Engineering or Metallurgy"; there are certain Universities that have great advantages from their position for teaching these special subjects. For us it may rather seem strange, having no workshops, to be teaching Engineering, but it is most desirable for us to be teaching Forestry because we teach it better than it could be taught anywhere else in England. It is a very wrong attitude for either Oxford or Cambridge, Birmingham or Liverpool, to say: "Just because you teach Forestry, we will teach it; because you teach Engineering, we will teach Engineering." We must try to distribute these functions, then, according to the financial and other advantages given to us so that we may survive in an efficient state, but we cannot survive if we try to teach everything. Suppose there were only ten people in England who would be pupils for Chinese. How could you expect every University to have a Chinese professor? We have not enough pupils in England at this moment for one Sanscrit professor. There must be a distribution of functions, and I maintain that in any financial consideration that is not only one of the most urgent matters, but one of the most difficult to carry out properly and effectively.

Sir Michael Sadler, Litt.D. (Leeds): Whatever falls from Sir Robert Falconer's lips is spoken with such force, and has behind it so great a weight of experience, that if it does not carry conviction it, at any rate, challenges those who do not immediately share his conclusion to offer for his consideration, and for that of others who have heard him, some remarks leading, perhaps, to a qualification of his judgment. May I say how cordially I accept, from my much more limited knowledge, his description of the services which the Provincial Governments in Canada have rendered to the higher education of Canada by their wise and generous liberality towards their Universities, and, above all, by their wisdom in entrusting the administration of their funds to such bodies, small bodies, of eminent and competent men as he has described. May I add, too, that the whole English-speaking world, and, not least, we in these Islands, are deeply indebted to the example of the Canadian Governments, and of many of the American State

Governments, in providing for their new Universities buildings which are noble to look at and sufficient for the needs of present and future. I never come from the American and Canadian Universities back to our own modern Universities without feeling ruefully how stunted our imagination has been in seeing the claim of higher learning upon a free people and the importance of having stately, beautiful, and commodious buildings for the accommodation tion of our students. Those are points entirely in favour of Sir Robert Falconer's argument. Because we have taken another line we certainly have fallen far behind the present Canadian and American standard of buildings in the new Universities.

But as I balance up the pros and cons of this difficult and fundamental problem, earnestly desiring to clear my own mind of preconceptions, and as earnestly desiring to look far into the future and not by any word or action of mine to stop the inevitable progress of things towards a better consummation, I feel, at the very moment when I want to capitulate to Sir Robert Falconer's beguiling and authoritative voice, something in my mind which says: Beware! Beware!

Canada has been going through a great creative period; it has been the country of great men, great builders of railways, great collectors of pictures—an historic age. May there be smaller men after Agamemnon? Secondly, my knowledge, personal, intimate, friendly knowledge, has been much closer with friends in the German Universities than with those in Canada. I know what happened at the University of M. All its funds came from Government. It very rarely failed to get a new Chair if it needed one; an addition to the library if one was required. But it had sitting within its academic circle a gentleman who was the representative of the Central Government, and who wrote not only official, but also unofficial letters to his employers in Berlin; and no word could be said in the academic senatus, or even at some private gatherings, which bore a political complexion likely to be unpleasant to the Government in Berlin but found its way by this channel of correspondence to the gentlemen at headquarters who disbursed the funds. I say that this is a condition of academic life which in itself is horrible; which, if Germany had won the war, we would rather have died than have accepted, and which, thank God, the war has crushed. Therefore, if even with the flower of a great intellectual life, as was the case in Germany, you have these abuses, these horrible insidious poisoning elements in academic life, and you can trace them practically to a close dependence of the Universities on the State, I say that, after all, the warning voice in our conscience should be listened to. From a knowledge

of Canada, limited as compared with my knowledge of pre-war Germany I am disposed to think that one difference, between the two countries is that the permanent Civil Service counted for a good deal more in Germany than in Canada. There are some eminent officials in the Canadian Education Departments, but go to Cultus Ministerium in Berlin. This eminent Congress itself would find it hard to staff an office with the same intellectual power. And it was that power which controlled the German Universities. It is not what the State thinks, it is not what individual ministers, like our friend Mr. Fisher, may think ; it is what eminent officials, less known to the general public, think that really dominates policy and matters in the long run.

But there is another point more fundamental than this, though I may be entirely wrong in my diagnosis. In England an institution that lives is an institution with a personalty. If an institution is to have a personality it must have a varied experience, intellectual, moral, administrative, even pecuniary. In the new Universities we are creating personalties. Therefore we have to go through this almost intolerable experience of wasting half our day on interminable Committees ; if we are Vice-Chancellors, putting ourselves into the humiliating position of asking for less money than we need from gentlemen who will never give us half they can afford. We sacrifice what at first sight seems the thing we most care for. Our books are never written ; our studies are never pursued ; we are serving, not tables, but the crumbs which fall from rich men's tables. Worse than this, our colleagues, more eminent than ourselves—chemists, classical men, literary men, are dragged from their books, drawn out of their libraries, their leisure disturbed, their life interrupted, their thoughts broken, in order that they may attend some meeting of the Senate where, in the middle of an immense agenda, there may be some item which concerns them.

We are building up institutions with personalities. It seems to me that in educational administration this is the great work of England. There is no country in the world with so many great institutions, possessing living characters and traditions and personalities, as England. Oxford and Cambridge are the greatest of all. If we hand over our freedom to officials, however wise, we are failing in our duty to build up again in England that which our forefathers built up in the older England, institutions with a personality which will hold fast to things that are unpopular rather than give way. Because that is at the bottom of it. The Canadian Universities are splendidly representative of Canada, They are perfect reflexions of the dominant Canadian feeling.

The Universities in New Zealand and Australia may be the same. But what is now the dominant opinion in England? Not one opinion, but, as always, two. England is two-minded. There are two Englands in one England. The England that we care for is the England which is the synthesis between those two points of view. But if we hand over our University institutions to Governments which more and more will be influenced by public opinion and often be misled by groups of people purporting to be leaders of the people, I say that we shall be in danger of making our Universities pale reflexions of merely one side of English opinion and that what we want are many institutions among which you may have faithful witnesses to unpopular truths and non-utilitarian studies.

THE CHAIRMAN: Though our University of New Zealand is a Government institution it is managed in this way. There are 24 Fellows of that institution, 4 appointed by the Government, 4 appointed by Professors of the University, 8 appointed by the graduates and 8 appointed by the Councils of the several Colleges. It is a purely University and Government institution.

FRIDAY, JULY 8.—Morning Session.

CHAIRMAN.

THE RIGHT HON. LORD ROBERT CECIL, M.A., D.C.L., K.C.,
CHANCELLOR OF THE UNIVERSITY OF BIRMINGHAM, M.P.

"The Universities and Research."

Seventh Session.

The Chairman: It is my duty to open the proceedings of this morning's session. I have had an opportunity of reading three at any rate of the papers which are to be the subject of discussion to-day, with great admiration and I hope not without profit, and one feature of the subject of them has struck me very much.

Research has obviously two aspects. There is the aspect of it which those who are to benefit by it mainly consider, the aspect of research which means the attempt to increase the domain of knowledge—that is evidently of very great importance; and then there is the other aspect of it, the aspect of it which is of greatest importance to those engaged in research, which from their point of view may perhaps be described as the attempt to discover new bases of knowledge: so that the value of research in University life has two aspects and has a twofold importance. From the point of view of results, from the point of view of extending the domain of knowledge, it surely is an essential part of a University not merely to teach students, but to increase the knowledge of mankind, for otherwise, it seems to me, a University becomes merely a superior kind of School. It is not for nothing that the ages have described Universities as the centres of learning, the meeting places of erudite men and women, the forum which gives them the opportunity of interchanging their ideas and assisting their common progress. But the other aspect of research is to my mind at least as important. It seems to me that it must form a prominent even an essential, element in mental training both of the students and of their teachers. For what lesson is more difficult, perhaps, for students to learn or more essential for them to keep in mind than that the boundaries of knowledge are for all practical purposes non-existent; that however much they learn, there is always much more to be learned, and that, however deeply they plunge into the unknown, it is only to open vistas of still greater progress in that direction. Such an aspiration, such an ideal is surely the best corrective to intellectual self-sufficiency—perhaps the most dangerous of all the snares that beset the youthful learner—and if it is a warning against self-sufficiency, it is no less, to those who are worthy to profit by it, a great stimulus to further effort. And for the teachers is it not perhaps an even more vital thing that they should refresh their minds by research from time to time?

I hesitate to speak on this subject in the presence of many who are far better qualified to do so, but is there not something in the popular criticism that those who are engaged in study tend to

suffer a fossilization of the intellect? Is not that a danger, a real danger, and not merely one that exists only in the comic papers? I can't help feeling it is so, and that there is a danger in a University of a certain narrowness of view, a certain non-receptivity growing up which must militate against the freshness and vigour of the minds of those who teach young men and women. Perhaps if the cardinals had been more familiar with research they would not have tried to put an end to Galileo's discoveries. Even my own University, Oxford, has sometimes been described as the home of lost causes—not that a lost cause is always a wrong cause! But if that is so, is there any better antidote than research, anything that will more certainly keep alive the mental faculties, ever putting before them the limitless improvement, the limitless progress which is open to mankind? In my youth, and indeed for many years, I had the privilege of a close acquaintance with that great master of research, the late Lord Rayleigh; and I think that any one who knew that great man will agree with me that there was nothing more remarkable about his character than his readiness to investigate any new hypothesis which was at all reasonable, his refusal to condemn *a priori* any speculation that had any plausibility about it—a quality which I am satisfied he owed largely to his training in research, and which gave to his mind a certain balance and a certain remarkable impartiality which was not only one of his great charms, but also one of his greatest mental qualities. I venture, therefore, to think with the writers of the papers that research is essential to the life of a University; and though I am quite aware that, particularly at the present time, owing to the rush of students there may be difficulties—I imagine there are difficulties in finding time even for so essential a matter as research—yet I earnestly trust that the British Universities will never abandon that aspect of their activities. This is true of the older Universities, such as Oxford and Cambridge, which rest, or are thought to rest, mainly on the study of the humanities. That is very well brought out in Sir Frederic Kenyon's paper. But it is even more true perhaps in the modern Universities, such as the one which I have the great honour to be connected with, the University of Birmingham. They are necessarily in closer touch than the older Universities with the commerce and the industry of the country, and to my mind the prosecution of research—indeed, it is now common ground that the prosecution of research is absolutely vital for the life of the industries of the country. It used to be a great reproach to this country that the leaders of industry underrated the value of scientific research. I believe that is passing away, and the newer Universities particu-

larly, but all the Universities, are called upon now to supply an essential need which is being felt more and more in those departments of our national life. I hope and believe that they will rise to the occasion. That is true and must be true in all circumstances; it is particularly true at the present time. We are in the position of having to renew and restore much that existed a few years ago and has been destroyed by the war; reconstruction is essential to us and reconstruction can only be accomplished by fresh conquests over Nature. We have lost much; our needs are greater than they ever were, and if we are to repair our losses it must be by new gains. It is true of this country; it is a national truth, a national need, but it is no less a world need than a national need, and this is the last point that I desire to impress upon you this morning.

Learning has no territorial boundaries; there is no such thing as national learning; world learning is the only thing worth considering. When a great scientist like Prof. Einstein comes here we do not inquire whether he is a German or an Austrian or a Swiss. We only know him as one of the great masters of science, one of the great leaders of scientific and philosophic thought. That is a profound truth. Learning is one of the great unifying forces of the world, and we have now, more than at any other time in our lives, a further opportunity to demonstrate this. Research is being held up all over the world by the consequences of the war. Not only has the war taken from us many, many men who promised to add to our knowledge and to distinguish the present age as one of great scientific progress—not only so, but the actual economic and material consequences of the war are proving a great hindrance to the progress of research. Perhaps you will allow me to read a short extract from a memorandum on the subject which has been supplied to me. This is what is said about the condition of affairs in Europe :—

> "Many professors have actually died of starvation and under-nourishment. From the armistice to the end of last year over 10 per cent. of the professors of Vienna University died largely as the result of want, starvation and consequent disease. A famous anthropologist, who had travelled all over the world collecting material for a work which other anthropologists stated to be of unique value, died last year of under-nourishment. A year before he had asked to come to London to finish his book, making certain investigations at the British Museum. That permission could not be granted, and the book will now never be published.

> "Even more serious is the handicap to professors because they are without the books, periodicals and magazines published in foreign countries since the war began, and they can under no circumstances purchase these books. Equipment also is lacking."

The Radium Institute, for instance, of Vienna, from which the larger part of the radium supplied for the experiments of Ramsay and Rutherford comes, is paralysed for want of funds. Another professor, whose biological research is very well known, writes in a recent publication :—

> "Now for want of even the most urgent necessities, without a servant for my laboratory, without animals for experimental and practical utility, I am forced to end and leave it to happier countries to take the lead."

Many other instances might be given, and I do earnestly think that here is a great opportunity for the British Universities to show that they recognize that research is the common interest of the whole world. Some of the British Universities have already responded nobly. They have subscribed nearly a quarter of the relief funds that have been collected, and my own University of Oxford, I am glad to think, leads the way, though Cambridge is a very good second. And this is necessary, let me add, not only to promote research but because it is part of even a larger work. In the great task of promoting the brotherhood of humanity, I venture to ask whether learning is to lag behind. Surely not! Let us not forget the great work done in past ages by the Universities in keeping alive by the interchange of learning the idea of the essential unity of mankind, and now that there is springing up in the hearts of so many the ardent longing for a new era, let the Universities continue to do their part, and by material help and common effort show that, in pursuing the advancement of learning, they have not forgotten causes of even greater and holier moment.

THE UNIVERSITIES AND RESEARCH.

First Paper.

The Universities and Humanistic Research.

A University has two objects: the training of citizens, and the advancement of knowledge. It is hard to say which should take precedence, though the educational motive is the first in historical development and has also played the leading part in the life of English Universities; but it is unnecessary to put them into competition, since they are not rivals, but the complements one of the other. The training of citizens includes their equipment with knowledge, and the advancement of knowledge is a condition of its continued vitality. Moreover the University is serving the State in both these phases of its activity; and unless it fulfils both functions it is not serving the State to the full extent of its capacity.

During the last few years, greatly increased stress has been laid on the need for the advancement of knowledge, or, to adopt the term usually employed, for research. On the one hand the nation has been forced by the War to realize the practical necessity of research; to see that research is not merely a harmless but negligible enthusiasm of the cloistered scholar, but a vital necessity for the life and progress of the nation. And on the other hand, students cut off from the land where research was especially pursued before the War, namely Germany, are pressing to receive equivalent facilities in England; and Universities which hardly thought of postgraduate work, except as part of the activities of the resident staff, are finding their doors besieged by students demanding postgraduate courses and diplomas as a part of their equipment for their careers in the outer world, and their quality judged by the extent to which they make provision for post-graduate studies.

When, however, the man in the street speaks of research, he is generally thinking of research in natural science—the research which produces aniline dyes, or optic glass, or substitutes for petrol to enable him to defeat the monopolist and the tax-collector, or for coal to deliver him from recurrent industrial crises. Even men of science themselves have been known to maintain that the term research belongs properly to natural science alone, and that what is called research in the humanities is something quite different.

The case for research in natural science will be championed before this meeting by two eminent representatives, and it would

be impertinent for me to add a word to it. But I am honoured by being allowed to take a part in stating the case for research in the humanities. Let me therefore begin by saying, with all the emphasis at my command, that I do not regard science and the humanities as rivals in any hostile sense of the term. They may be friendly rivals, if you will, each striving to outdo the other in its service to the world; but enemies, never. The State will only prosper healthily if both flourish; and neither has anything to gain by the depression of the other.

Research means the investigation, the tracking, of truth; and truth may lie either behind us or before. In natural science, research takes the form of searching out the hitherto undiscovered properties of nature. In the humanities it is mainly the recovery of information concerning the past history of man—including in that phrase the history of his thought as well as of his experiences. And let no one say that this is less "practical" than the other. The knowledge of man's thoughts and man's experience in the past is as vital for the well-being of States and of individuals as the knowledge of the properties of coal-tar or radium. They are different, but both are necessary.

The value of research in humanistic studies is twofold. It increases our knowledge of human nature, and it vitalizes the studies which give us that knowledge. It is probably less necessary now than it might have been seven years' ago to dwell upon the importance of a correct judgment of human nature, an extensive knowledge of the past histories of nations, a full acquaintance with economic laws and their working, a sober valuation of the material and ideal motives which influence human action. Faced as we have been and are with political and economic problems, on the correct solution of which the existence of our nation depends, we need all the equipment we can get from the experience of the past. Take but a few of the more obvious examples. To an educated historic sense in the governing classes we owe the continuity of English constitutional history, and the lessened violence of the crises through which it has passed. The French Revolution has furnished us with lessons and warnings most applicable to the Russian Revolution of to-day. The economic crisis in Russia is due to defiance of the laws, both of economy and of human nature, which history teaches. The democracies of ancient Greece faced in little many of those problems of democracy which face us on a large scale to-day; and we can profit both by their experiences and by their political thought. The Roman Empire furnishes the one body of experience comparable with the British Empire; and the more we learn of the

successes and the failures of Roman administrators, the better equipped will our own statesmen be to deal with the problems which confront them. Just as, by universal consent, the great general must have his mind full of the lessons of past military history, although he will never have exactly the same circumstances to deal with, and will never exactly imitate the campaigns of his predecessors, so the great statesman will deal more surely with the political problems of his own day if his mind is stored with the lessons of political history.

Now, if all history was already exactly recorded and perfectly known, research would not be needed, though discussion of its results would still be profitable and necessary. But this is very far from being the case. There is very much still to be learnt of our own constitutional, social, and economic history. Our unrivalled wealth of records is still most imperfectly explored, and we have still much to do to set our house in order so as to make this exploration possible. The organization of the Roman Empire and the administration of its provinces are still, after two generations of research, being laboriously pieced together out of a multitude of fragments of evidence, each of which seems almost insignificant by itself. The histories of Mesopotamia, of Asia Minor, of Egypt in the past have valuable lessons for to-day, because the great facts of geography and climate remain constant, and shape the needs of those countries now, as they did in the days of Rameses, of Nebuchadnezzar, and of Xerxes; and concerning all these lands much knowledge still awaits the spade of the explorer and the implement of the scholar. Historical knowledge is like scientific knowledge in this, that it is built up out of details which in themselves may often seem to have no practical bearing whatever. Truth must be sought disinterestedly, for its own sake; and suddenly truth will prove its value for practical purposes which even the man in the street can appreciate.

I need not, however, dwell on the importance of research in history, since this subject will be dealt with by one who has far greater right to speak of it than I. But I would wish to remind you that research likewise has its value in the sphere of literature. Literature is the embodiment of the thought of the past, and its interpretation depends on an exact appreciation of the words in which it is expressed and of the circumstances in which it was written. Even after generations of literary criticism we have still something to learn of authors so well known as Virgil and Horace, and very much more of the writers of an earlier age. Our comprehension of Homer has been profoundly modified as the result of two generations of research. Archæology and anthropology have

combined to vivify our appreciation of the Athenian dramatists and of Herodotus. The spade of the explorer has added to the extant remains of Greek literature, and much literary and historical research has been needed to elucidate these discoveries. The term "research" may also be extended so as to cover linguistic and philosophic study of ancient texts, and much of it has been very profitably applied to the writings of Plato and the remains of his predecessors in Greek philosophy. We are realizing ever more clearly that our immediate intellectual ancestors are far more to be found in the great age of Greece and Rome than in the millennium which preceded the Renaissance, and that our own thought grows stronger and clearer through the study of it. Even the minute investigation of grammatical forms and linguistic usage has its value as contributing to build up a correct interpretation of the meaning of the great literatures upon which our own is founded.

I cannot do more within my allotted limits than thus indicate in brief summary the main lines along which humanistic research is needful to increase our knowledge. But there is a second reason which makes such research essential. Unless a study is rooted in research, it will die. It is a matter of daily experience that teaching which consists merely in the repetition of stereotyped information or stereotyped thoughts tends to lose vitality and to cease to interest or to inspire. A sermon may be a good sermon when first composed, when it expresses a real thought which is vivid in the preacher's mind, but its power evaporates if it is repeated mechanically and without fresh thought. Exactly the same is the case with lectures or with class teaching. The teacher who repeats his old lectures, year in and year out, will, before long, cease to inspire his pupils.

The reason is mainly a psychological one. "*Si vis me flere, dolendum est primum ipsi tibi.*" Unless the teacher feels a keen and living interest in what he is teaching, he will not rouse enthusiasm in his disciples. A gifted few may be fired by the subject-matter of their study; but for the majority, enthusiasm is kindled by the personal contact of mind with mind. And a teacher's interest in his subject can only be kept fresh if he continues at the same time to be a learner. He must be always adding to his knowledge, either by personal research or by keeping himself abreast with the research of others. There have been times in the history of learning when scholars seemed content to chew the cud of their intellectual nutriment without attempting to add fresh material to it; but those have been the periods of stagnation, when learning threatened to lose its hold on the living mind of

man. Intellectual alertness has always gone hand in hand with advances in knowledge.

Perhaps the ultimate foundation of this psychological fact is that all progress must be rooted in truth. The teacher must be persuaded that what he is teaching is truth, or his instruction will become conventional and ineffective. And if he is to maintain this persuasion, he must be constantly assuring himself of it by fresh investigation, by testing his conclusions, by endeavouring to add to his knowledge, to acquire yet more and more certain truth; in other words, by research and by study of the research of others. Otherwise he will, insensibly, perhaps, but infallibly, lose the confidence that what he is saying is the truth and the whole truth as it is at the moment known; and with the waning of this conviction his teaching will lose its force.

I hope that this vindication of the need for research in humanistic studies, no less than in natural science, will carry conviction. There is, however, one qualification (applicable no less, I imagine, to science than to the humanities) which has been parenthetically indicated. I have spoken of research *or the study of the research of others;* and I think the alternative is important. Not every one has the necessary qualifications for original research. Research (if it is something more than the accumulation of statistics) demands gifts, not merely of industry or of willingness to learn and devise for the truth, but also of imagination and insight. Such gifts are not universal, and in any high degree are rare. Πολλοί τοι ναρθηκοφόροι, βάκχοι δέ τε παῦροι. I do not therefore urge that every teacher and every student should engage in research in the stricter sense of the term. Such a policy only leads to accumulations of facts mechanically collected, and to much waste of time. What is important is that every one who has the talent for research, whether in greater or less measure, should be encouraged to use it; and that the remainder should be content to familiarize themselves with the results of research and to exercise their judgment in the estimation of their validity and value. In this way they are paying their tribute to truth, they are keeping in contact with truth, to the extent of their powers; and they will have their reward in the vivification of their teaching, no less than if they made the discoveries themselves. Indeed there is a very real place reserved for those who act as interpreters of other men's discoveries. The true researcher has not always the gifts of exposition. He may lack literary expression. The very extent of his knowledge may make it difficult for him to appreciate the limitations of other men's minds; and a man with less originality of thought may be the best exponent of his knowledge to

others. There is always need for Aaron as well as for Moses. What is necessary is that all students and teachers should, in one way or the other, keep in contact with truth, and so preserve their minds from petrifaction. It is not the stagnant pond that gives refreshment and health, but the lake that is constantly quickened with living waters.

It is not with any misgiving that I have undertaken to plead the cause of research in the sphere of humanistic studies; nor do I feel that anything of the nature of special pleading is involved in the undertaking. There can seldom have been a time when the possibilities of such research, and the value of the results derivable from it, were more manifest. The last fifty or sixty years have been a period of more marked progress than any since the age of the Renaissance. Take archæological research. Within the last century we have had the excavations of Botta, Layard, Rawlinson and others at Nineveh, of Koldewey at Babylon, of the Americans at Nippur, of Le Sarzec at Susa, of Winckler at Boghaz-Keui, of Hogarth, Thompson, Woolley and Lawrence at Carchemish; and these (with others too numerous to name) have given us an extensive (though still far from complete) knowledge of the history and civilization of Babylonia and Assyria, of Persia and the Hittites. Further east, Sir Aurel Stein has recovered the lost culture and discovered new dialects of Central Asia, and has revealed a wholly unknown period of early Chinese art. Egypt has occupied an army of excavators, and its history has increased in length, in substance, and in reality, from the earliest pre-dynastic ages down to the Græco-Roman period which preceded the conquest by Mohammedanism. The excavations of Schliemann at Troy and Mycenæ threw a wholly new light on the civilization of the Homeric age; and this history was carried back for another two thousand years or so by the brilliant and epoch-making discoveries of Evans in Crete. The whole history of the Mediterranean basin, the cradle of our civilization, has been taking form under our eyes, as the patient labour of explorers and scholars has added line upon line, line upon line, here a little and there a little, to its record; and the whole is being linked up with the investigations into the Bronze and Stone Ages which have occupied the prehistoric archæologists of Western Europe.

The last half of the nineteenth century was emphatically, for classical scholars and the students of ancient history, the age of archæology; and the productivity of this field of research shows no signs of exhaustion. Work is now going on, or will go on as soon as political conditions admit of it, in Egypt, in Palestine, in Syria, in Mesopotamia, in Greece, in Italy, and in the Cyrenaica.

A somewhat later, but overlapping development has been that of papyrology, which within the present generation has restored us lost works of Sappho, of Pindar, of Bacchylides, of Sophocles, of Aristotle, of Herodas, of Hyperides, of Ephorus, of Timotheus, of Menander, and of many other authors known or unidentified; has seriously affected the textual criticism of the Greek classics; and has likewise furnished us with a whole mass of material illustrating the administration of the Ptolemies, the Romans, and even the Arabs in Egypt. The working out of all this material will alone give occupation to a large number of students, and the results of their researches cannot fail to increase substantially our knowledge of the history and literature of the ancient world.

A notable example of the efficacy of laborious research is the accession to our knowledge of the administration and inner life of the provinces of the Roman Empire which has come from the investigation of inscriptions. This is the work which made Mommsen famous; and his insight and example have inspired an army of followers. Hardly one in a thousand of the countless Latin inscriptions which have come to light in Europe, Asia, or Africa, wherever the Roman eagles flew, appears to have any interest or value; but their accumulated effect has been to re-write, or to make it necessary to re-write, the history of that Empire with which our own has so many links of kinship. The Corpus Inscriptionum Latinarum is a monument of humanistic research.

Similar work has been done in the departments of architecture, of sculpture, of ceramics, of numismatics. Our museums are full of the results of excavation, and our text-books of the conclusions which have been drawn from them. Similarly the handmaid sciences of epigraphy and palæography have gone forward; and in each of them (witness the work of Traube and of Lindsay) the moral is the value of the infinitely little. It is almost invidious to mention names, for the list is so long that it would resemble the Homeric Catalogue of Ships, or the enumeration of those who under Nehemiah built the walls of Jerusalem.

The work that has been done in the sphere of mediæval and modern history is not less striking; but I need not dwell on it, for I have no doubt it will be amply set out by Professor Firth. Again its striking feature is the results that accrue from the accumulation of small details. Where Stubbs and Maitland showed the way, a host of scholars has followed; and patent rolls, close rolls, pipe rolls, inquisitions, fines, cartularies, yearbooks, wardrobe books, and scores of other names denoting various species of mediæval records, have become familiar as the materials out of which the history previously derived from chronicles and other

literary documents has been corrected, expanded, and filled with new life and detail. The long series of State Papers and the volumes of the Rolls series and the reports of the Historical Manuscripts Commission indicate, but are very far from exhausting, the wealth of material available for the researcher in this country alone. The danger is not that the researcher should lack materials, but that the researchers may not be numerous enough to deal with the material that awaits them.

What, then, is the duty of the Universities in respect of research? I do not think it will be disputed that in the past too little thought has been given to it. Individual scholars have conducted research on their own lines, often with admirable results; but there has been very little organized training of students in the methods of research. Systematic postgraduate work has played a very small part in the life of the University, and has perhaps not been very highly thought of. But within the last ten or twenty years the tide has been changing, and the requirements of the altered conditions arising out of the War have accelerated its set in the new direction. All Universities, old as well as new, are making increased provision for research, and are realizing both that a University will be, to a great extent, judged by the quality of its advanced work, and also that the more elementary training which leads up to the first degree derives no little part of its strength from the research work of the elect few. Devotion to research work on the part of a University in no way implies that its other great function, the training of the young generation in citizenship and intellectual culture, is likely to suffer. On the contrary, it means that its intellectual training, being rooted in truth and constantly refreshed by contact with it, is in less danger of becoming conventional and uninspiring.

Humanistic research has this great advantage over scientific research, that it is comparatively inexpensive. It does not need extensive laboratories and a costly equipment of instruments. But some equipment it does need; and I am not sure that some of our newer Universities have not suffered from failing to recognize this fact. The first and main need is, of course, a library. Our two ancient Universities are well provided for in this respect; but just because this equipment has existed from an indefinite past, its essential nature has perhaps been overlooked, and the new Universities have thought more of laboratories than of libraries.

It has recently fallen to my lot to visit several of the provincial Universities of England and Wales, and to collect statistics with regard to all of them; and I should like to take this opportunity of doing what I can to strengthen the hands of those who in each

of them are pleading for the fuller recognition of the needs of the University library. The library is the heart of all the University's work; directly so, as regards its research work, and indirectly as regards the educational work which derives its life from the research work. Scientific research needs a library as well as its laboratories; while for humanistic research the library is library and laboratory in one. It is lamentable to see how slight is, in some cases, the provision made for keeping the library up to date. No doubt the "*res angusta domi*" has something to do with it; but if the vital necessity of a well-equipped library were as well realized as that of a well-equipped laboratory, I feel sure that the money would be forthcoming somehow. The Scottish Universities are better off than the provincial English Universities in this respect, because they are older; but it ought to be impressed on the great towns in which our provincial Universities are for the most part situated that a first-class library is essential for a University of which the town has any right to be proud.

The exact organization of the University library will differ in different places, according to topographical considerations; but the ideal to be aimed at is a great central library, with departmental libraries in organic connexion with it. Each branch of knowledge needs its departmental library, well equipped with the books most in use by research students, and providing a place in which the student can work and the teacher conduct his classes or seminars; while the main library furnishes the reserve which can be drawn upon for books more rarely needed or too costly to be duplicated. Training in research is mainly a question of learning to use the tools; and if the tools are not there, how can the student learn to use them? Even in London, where several of the Colleges have libraries which are by no means to be despised, it is disappointing to find how constant are the applications of students for admission to the British Museum Reading Room, on the ground that the books which they need are not to be found in their Colleges.

And while I am on the subject of libraries, I do not think it will be out of place to refer to another very important element in their efficiency; I mean the librarian. If the library is to be efficient, the library staff must be adequate, both in quantity and in quality. It is a bad sign when a University regards its librarian as little better than a clerk, and pays him accordingly. The librarian should be an officer of professorial status, with a standing in the Councils of the University which allows him to represent the needs of his department with weight and authority. If he is not so, either the University has not provided itself with a library adequate to its needs, or it is starving the *personnel* that administer it.

Professors rightly have a considerable voice in the choice of books to be ordered for the University library ; but the librarian should be able to speak to the professor on equal terms, and to consider with independent judgment the needs of the several departments, and the best means of satisfying them.

Apart from the libraries, general and departmental, the main demand of humanistic research is for archæological equipment. To what extent this must be provided depends on the extent to which archæology is cultivated at each University. Not every University need make a special point of archæology, just as not every University need specialize in engineering or agriculture. But even for elementary work *some* equipment is necessary, and some grant for the purchase of casts, models, maps, and occasional originals should be at the disposal of the classical professors. The more this can be done, and the more a museum can be built up, as it has been in some of the new Universities through the liberality of benefactors and the energy of the staff, the better for the teaching of the University, not merely in archæology itself, but in the history and literature which archæology illustrates.

One more requisite for research must be mentioned : Leisure. If a man is to make additions to knowledge, he must have time to search, and he must have time to think. During the period of special stress following the Armistice, when students flocked to the Universities in unexampled numbers to make good the arrears of four years of war, very few teachers can have had any leisure for their own work. Further, economic conditions made it the first duty of the University to provide a living wage for its existing staff, before it could go on to relieve the pressure on them by an increase of numbers. Now, however, the special post-war inflation is passing away, and the Universities have to set their houses in order to meet what may now be seen to be the normal conditions of the future, and their houses will not be in order until the numbers of their staffs are such as to allow teachers, junior as well as senior, some time to replenish their own minds, and, if their capabilities lie in that direction, to make contributions to the advance of knowledge by the prosecution of research.

In the advancement of knowledge and the cultivation of high ideals lies the hope of our nation ; and in both respects a great responsibility is laid upon our Universities. It is for them to lead, for them to hold high the torch that others may follow. And this they cannot do, whether in the sphere of natural science or in the humanities, unless they hold in due honour and make full provision for that disinterested pursuit of truth which we call Research.

F. G. Kenyon.

THE UNIVERSITIES AND RESEARCH.

Second Paper.

Historical Research and University Teaching.

The aim of historical research is the same as the aim of scientific research; each is an endeavour to add to what is already known by fresh discoveries, and so to extend the boundaries of knowledge. The frontispiece to Bacon's *Novum Organum* represents a ship passing through the columns of Hercules from the familiar waters of the Mediterranean to the unknown seas beyond, in order to seek new worlds. Under it is the motto, "*Multi pertransibunt et augebitur scientia.*" This should be the motto of Schools of History, as well as Schools of Natural Science. Their methods must differ, though they differ less than people suppose, but their aim should be the same.

Ancient History began to be studied in the English Universities in the seventeenth century; Modern History was introduced into them in the eighteenth. In the nineteenth century, both Ancient and Modern History became examination subjects, at first in combination with other subjects, but after a time, separately. The Modern History School at Oxford dates from 1872, the Modern History Tripos at Cambridge from 1873. The progress of Modern History in the new Universities, in Scotland, and in Ireland, is briefly sketched in a paper contributed to the Historical Congress of 1913.*

Speaking generally, the aim of the Schools established in the various Universities was to give the students who passed through them a fund of general knowledge of history. The process of acquiring that knowledge was held to be of educational value as a mental training, and the knowledge itself of practical utility for political life and other purposes. It was hoped that the acquisition of this general knowledge of history would lead some of the best students to devote themselves to historical work afterwards, but no serious attempt was made to train men systematically, so that they might be capable of adding to knowledge. In this respect the historical teaching given in our Universities fell far behind the scientific teaching given in them during the same period.

Of late years a change has taken place. In 1895 Oxford

* "The Study of Modern History in Great Britain." By C. H. Firth. *Proceedings of the British Academy*, Vol. VI. See also "The Present State of Mediæval Studies in Great Britain." By T. F. Tout. *Ibid.* Both pamphlets are published separately by the Clarendon Press.

established the degree of Bachelor of Letters, to encourage research in History and other subjects, while Cambridge, about the same time, made a change in the regulations for its degree for the same purpose. Finally, the British Universities in general during the last four years have established a new doctorate obtainable by the production of a piece of original historical research.

On the other hand, research cannot be created by establishing degrees; it is the product of a spirit and a method. In scientific subjects the method of instruction and the spirit of the teaching are favourable to research. In History they are not. Speaking generally, neither the old nor the new Universities have as yet organized an adequate system of training for the historical students they invite to work for research degrees; some are endeavouring to do so, others content themselves with establishing examinations.

However, it cannot be supposed that any University means to confine itself to giving degrees to students trained elsewhere, or intends permanently to encourage men to produce original research without training. Hence it is desirable to state briefly what a University should do which wishes to fit men for the work of historical investigations. To guide us we have the examples of a number of foreign Universities, and the suggestions furnished by the scientific teaching in our own Universities.

A man who undertakes a piece of historical investigation has three tasks before him. One is to find the printed and manuscript materials which contain the evidence he requires. The second is to examine and test the materials he finds in order to extract the truth from them. The third is to put the facts together and to explain their bearing on the problem or the period he has undertaken to investigate. The student has not only to acquire knowledge, but to learn a method of investigation. In all his three tasks he requires help and teaching. It is not sufficient to throw him into a library or a record office, and leave him to sink or swim.

To know what materials are available the student has to acquire a knowledge of books and records. He ought to be taught something about the organization of libraries and records, and to learn what books of reference, guides, catalogues, and bibliographies exist. If he is not taught this he loses a great deal of time in random and often fruitless searching, and is likely to overlook important sources. At present the dissertations written by research students often show defects resulting from lack of instruction in this subject.

The student also needs instruction in the criticism of authorities. There are well-defined tests by which the value of a chronicle, a memoir, or any other kind of historical document can be ascertained, and the various classes of evidence have defects and merits which should be estimated and allowed for. This process of testing and analyzing the materials of history is analogous to the work which scientific investigators have to do in their laboratories.

Finally, the business of historical exposition, which includes statement, arrangement, method of proof, and so on, is also a subject in which some teaching is needed.

The teaching, therefore, which has to be provided for research students in History is of two kinds. First, certain lectures of a special and technical kind, such as Palæography, Diplomatic, Archæology, Bibliography, and other auxiliary subjects, supplemented by some practical instruction in the reading and use of MSS. Secondly, practical training in critical and constructive work. This training is best given in seminars; that is, in small classes in which half a dozen or perhaps a dozen students work together under the direction of a professor, concentrating their work on the same period of history, attacking different sides of the same subject or problem, and discussing the results and methods of their researches together. The business of the professor is to direct them in this common task, to point out to them the questions which require elucidation, see that they use the right authorities, and correctly estimate their relative value, criticise their conclusions, their method of proving them, and their way of stating them. The apparatus required for work of this kind is a room stocked with the most essential materials for the history of the period studied—a room set aside for that purpose alone, in which the students can read, write, and work between the meetings of the group and in the absence of the professor—in short, something like a laboratory.

At present, the special lectures of a technical kind, which historical investigators require, are not yet provided in many of the British Universities, or are very insufficiently provided. Historical seminars are usually lacking; their place is sometimes filled, very inadequately, by "practical classes," and sometimes there are not even those substitutes. By a "practical class" I mean a class devoted to a particular subject, in which books and documents are habitually employed, and the teacher directs the work in some such manner as described above, but no room is set aside for the students to work in between the weekly meetings of the class, and no adequate equipment in the shape of books

is always at their disposal during these intervals. Thus, as a rule, much has yet to be done and spent to provide the teaching and the apparatus for teaching needed for advanced study.

Here, at Oxford, our strong point is the provision made for the student who wants to research in Mediæval History. We have lectures on Palæography and Diplomatic, and occasional instruction in Mediæval Archæology and in Bibliography. We have a seminar on the Legal, Economic, and Social History of the Middle Ages, conducted by Sir P. Vinogradoff; it is very well housed and well equipped with books. In Modern History there is no seminar, but there are two or three practical classes (including my own, which deals mainly with Seventeenth Century History). We hope to organise next term a seminar for Colonial History, directed by Prof. Coupland.

At London a special Institute of Historical Research attached to the University is to be opened on July 8th, which will provide accommodation for several seminars, and the study of Economic History is centred in the London School of Economics. Prof. Pollard's advanced class for the study of the Tudor period has long been one of the distinctive features of historical teaching in London.

I leave the representatives of other Universities to state precisely what amount and what kind of teaching they provide for research students in History. All I wish to point out is that the strength of one University lies in the teaching of one part of History, and that of others in the teaching of other parts, and that this division of labour is natural and beneficial. No University can provide efficient training for advanced students in all parts of History. The sooner the various Universities recognize the necessity of this specialization the better.

It is, to a certain extent, imposed by the nature of the subject. In many branches of science the materials on which the student has to work can be brought to him anywhere; but the historical investigator has to go to the place where his materials are. Some books can only be found in particular libraries; records and State papers are permanently located in certain repositories. Hence the question, What researches can best be pursued in a particular University? is largely a question of the nature of the collections of documents accessible in or near it. London and Edinburgh have obviously a great advantage in the possession of the National Record Offices. In other Universities, unless the character of the subject chosen by the student permits him to utilize local archives, arrangements must be made which will

allow him to spend a large amount of his working time in other places.

The contents of the local libraries impose other limitations. The older Universities are so much better provided with books that they can offer the historical investigator a large choice of subjects. The new ones (excepting Manchester) are so much less well equipped with the printed materials for historical research, that the student must of necessity restrict himself to certain definite periods, and the University library must get together the books required for working on those periods. Generally the sum allotted to the historical department of their libraries is too inadequate.

Another consideration which imposes this division of labour amongst the Universities is the character of the teaching required. Concentration on some particular period or subject is the essential condition of research. A professor of History does not know History, but only a little bit of it. He can only know the original sources for a limited period, and he must have made researches of his own in it, and must also be familiar with the investigations of the latest workers in the same field. On this combination of experience and special knowledge his value as a director of research students depends. Those who choose their subjects from the period he knows get the advantage of both ; those who take them from some other period may get some help from his experience, but lose all the benefit they might derive from his special knowledge. French and German research students understand this, English and American ones usually do not. Those who come here seem to think they can select any subject which strikes their fancy, without regard to the teaching available, and often with just as little regard to the materials available here.

These research students from outside fall into two classes. A minority, who have received a really adequate training for research elsewhere : these can be left to themselves ; all they need is occasional advice. A much larger number who have received either no real training, or a very inadequate one elsewhere, and need systematic training here, if they are to produce work of any real value. At present they generally do not receive this training, because instead of concentrating themselves on those parts of History where such training is or can be provided they scatter themselves over the whole field of History. Consequently it becomes impossible to form them into groups or classes for systematic practical instruction of the requisite kind.

Here, this situation is mainly the result of certain local condi-

tions. The neglect to organize advanced historical instruction in the past, the lack of research students in history of our own, the nature of the regulations for the admission and examination of research students. But I think that some other Universities are in the same position, owing to similar mistakes. To encourage historical research the first thing needed is the organization of proper training for research students ; the establishment of degrees to reward research is of secondary importance.

There is one more question to which I wish to direct attention. The aim of historical research is to add to knowledge. The writer of a successful dissertation is rewarded with a degree because his work is an addition to knowledge. But a dissertation which is not published does not increase knowledge. The candidate learns a good deal in the process of producing it, and the examiners learn something in the process of looking it over, but the world is none the wiser for it, and learning is not advanced by it. In some form or other a good dissertation must be published, in order that the labour spent upon it may not be fruitless.

Secondly, the publication of the work for which the degree is given is to the interest of the Universities. It is the only way in which a high and uniform standard can be maintained by them. The criticism of experts in the University and outside it keeps examiners up to the mark, and prevents the degree being made too easy in any particular place.

Publication is also the greatest stimulus to candidates to produce good work. They know that other students of history attach more importance to a good piece of original work than to the title of doctor.

Hence, if a University desires to encourage research, it must provide means for the publication of results as well as providing instruction and examinations. At present, however, owing partly to the cost of printing, partly to the neglect of the Universities, hardly any of the pieces of historical work for which degrees are given obtain publication.

There are two or three ways in which such work is usually published. One is to impose the cost of publication on the successful candidate. That has the advantage of obliging the author of a dissertation to study conciseness, but imposes too heavy and too unequal a burden on those who obtain these degrees, and at present, owing to the expense of printing, it is impracticable. The other way is for the University which gives the degree to undertake all or part of the cost. This may be done through the Press of the University (if such an institution exists), or by making an annual grant for printing to the Department or

Faculty concerned. The drawback of the first plan is, that the managers of University Presses may accept an occasional dissertation, but will not undertake a series, and do not necessarily select for publication those that are of the most historical value.

The advantage of the second plan is, that the decision which of the dissertations shall be published rests with the people who are the best judges of the relative value of the pieces of work approved for the degree. It also allows them to print the dissertations in a cheaper and less pretentious form, like the series of paper-backed pamphlets, which Johns Hopkins, Columbia, and other American Universities issue. So the money goes further.

If it is impossible now for the Universities to publish the dissertations obtaining the degree in either of these ways, there is a substitute for integral publication which ought to be tried. It is the publication of an annual report containing abstracts of the dissertations approved, such as the Ecole des Hautes Etudes, at Paris, issues every year under the title of *Positions des Thèses*. It consists of abstracts of the dissertations, each filling about half a dozen pages, and showing the scope of the piece of investigation undertaken, the nature of the evidence employed, and a summary of the conclusions reached. This collection of eight or ten dissertations supplies an account of the research work completed during the year, and is published at the expense of the Ecole. From it historians can form an estimate of the importance and originality of the dissertations summarized, and on this evidence publishers can decide whether a particular dissertation is worth printing in full.

If some of the Universities concerned would publish little collections of abstracts of this kind, in the same style and on the same scale, their contributions might form an annual volume, which would afford a conspectus of the progress of historical studies in Great Britain. General agreement cannot be hoped for, and need not be waited for, but if two or three would show the way, others would probably fall in with the plan.

C. H. FIRTH.

THE UNIVERSITIES AND RESEARCH.

Third Paper.

Research in Natural Science.

The ancient walls of Oxford were raised in the spirit of piety, and in the love of learning; but learning was handmaiden to piety, and in those days stood, as it were, reverently in her presence as being the means to a great end—the strengthening of the Church.

The evolution of thought since then makes a wondrous story. But although there was, throughout, a continued slow advance towards the more liberal ideals, only with the birth of Puritanism in the days of the Civil War did the modern spirit of research enter into Oxford. In Harvard and Yale the story is the same. Obscurantism was not in the creed of the Puritan, however spiritually restricted his sect might be. And it was here in Oxford that the greatest of research societies had its birth. We should pay attention to the fact that the Royal Society had origin in the endeavours of such diverse spirits as Wilkins, Boyle, Wren, Seth Ward and Wallis. Diverse in their erudition they certainly were, and their discussions may well have ranged over theology, mathematics, the fine arts, and the, then, newer methods of experimental investigation—in fact, from the most ancient to the most recent phases of human thought. It is strange to reflect upon the contrast between such symposia, and those of a modern meeting of the Royal Society.

But we must not fall into the error of assuming that, because science has advanced exceedingly, the case for research in the Universities is based on unanimous goodwill. There are many who look with aversion on scientific research as an academic subject. They question its utility as an educational instrument, and they question the value of the return for the very great expenditure involved.

I have heard it maintained by men of high academic status that research is not a legitimate subject for College expenditure. That the legitimate function of the University is *teaching*, and that beyond that function it should not aspire.

But in truth the argument for research in Universities rests upon the broad basis of the value of the intellectual progress of mankind. I think I am correct in saying that most men who have adopted a life of research, or have made research the object of their special interest, have acquired their intellectual ideals in their days of College life. And herein is the primary argument

for research in Universities. It is through the University that the young man comes into contact with the investigators of his time, and it is their example and teaching which affect his future life. If his teachers are without interest in research the student learns indeed the text-book, but the enthusiasm to create new knowledge is not implanted in him. Whatever his intellectual capacities may be, he passes from his University but an ordinary member of the educated public. What he might have accomplished and could have accomplished had he found himself in a creative atmosphere during his student days remain entirely unknown.

There are exceptions to this, perhaps commonplace, statement: cases of men who are, seemingly, born investigators. They are scientists in their schooldays. They perpetually seek the answer to the "Why?" and the "How?" which call to us on every side. It is remarkable, but such born investigators exist and have existed. It is impossible to say whence came their exploratory spirit. Perhaps from external influences which to other minds would have been quite ineffective or even imperceptible. Leaving aside the rare exception we must admit that we owe far the greater number of our research workers, whether in science or in the "humanities," to the influence of the University. Take this influence away, and what have we left? The answer is: very little, and nothing that will systematically lead youth into the way of seeking after new knowledge. The academy will never serve this end. Of necessity it must be the meeting place of mature minds; of intellectual interests already formed and developed.

To all those who are sincerely desirous of promoting the advance of knowledge this argument is overwhelmingly strong. It leaves no excuse to those in high places if they fail in promoting this great branch of University work. No excuse, unless they are willing to admit that they are possessed of other intellectual ideals; that research is not of value in their eyes; that it is antagonistic to the spirit which they prefer—that which accepts authority before investigation. Unless they are, in short, obscurantists in sympathy and in fact. We are not here to combat that attitude. It is, fortunately for our hopes of happiness, fortunately for humanity, less prevalent in our times than in past days.

I do not think that any other argument for the cultivation and promotion of research in Universities need be stated. If the investigation of nature is good in itself; if its effects are beneficial to our race; if it is desirable that we advance in knowledge

from generation to generation, then we should see to it that our brilliant young men get the chance of taking up this career in the service of mankind. There is, as I say, no answer to this argument unless we assail its basis and determine that obscurantism is the better thing and enlightenment the worse.

Great Universities have done great good. They have also done great harm. Their inertia, their opposition to development, to following the evolutionary changes of their times, constitutes their principal offence. Even to-day I hear in my own University surviving voices expressive of distrust in science as an educational subject; doubts as to the propriety of including science as a primary subject in the University curriculum; regrets that the so-called "great" or "fundamental" subjects of education—*i.e.*, classics and mathematics—should no longer form the only road to Fellowship.

Such views on science are the natural outcome of an upbringing in the traditions of the older educational methods. To attain the forefront of classical criticism or of mathematical advance is a more difficult task than to reach the exploratory front of a branch of modern science. And not only is it more difficult to arrive at the forefront, it is also more difficult, when the forefront is attained, to find work of any probable benefit to mankind. Only the most brilliant scholars and the most original minds can prevail. Compare these conditions with those attending research in any of the newer domains of modern science. No sooner has the student mastered the principles of his subject than he finds himself approaching an unknown territory. Everywhere he sees the words "Not known" written up, and any one of these innumerable avenues to knowledge are for him to tread if he so pleases, and if he is equal to the task.

The contrast is remarkable. The older scholar, who has spent his days turning over the thoughts of others, and the time-worn records of past efforts, gradually arrives at the fatal conclusion reached by the wisest of men—"There is nothing new under the sun." He has passed a lifetime of solid work and seen but little come of it. Must not the younger workers be branded by superficiality? The Classic says in reproach "they do not understand the vocabulary they have called into existence." The Mathematician says in reproach "their mathematics are child's play." I am not inventing. I am familiar with these reproaches, and not long ago I listened to a learned mathematician criticizing in just such language one of the most valuable and original monographs of modern science.

The difficulty really resides in the fact that the older scholars

have not learned to appreciate the greatness and many-sidedness of modern science. At a Parliamentary Commission which sat in Dublin some years ago, a great mathematician stated in public that he recognized but one "science": that of mathematics. He was a mathematician, indeed, of more restricted views than is at all common to-day. But even so, many of the older teachers are not aware that science in our day has branched again and again, and that in any one of its great subdivisions and ramifications, the investigator, the thinker, might expend profitably a lifetime of work. Their knowledge of what research really means is mainly restricted to its enormous cost. They cast regretful glances at the lives of their forerunners; of whom it might have been said: "No hungry generations tread thee down." They see the scholar's modest library expenses replaced by thousands laid out on apparatus which are for ever evolving and changing into new forms; or expended on buildings which are everlastingly shrinking (relatively to the demands upon them), like Alice's doll house. Is it any wonder that the views of those old-world scholars so long retarded the advance of modernism?

As regards this subject of expense. There is no doubt that, contrasted with blackboard and chalk, modern scientific apparatus and scientific laboratories are expensive. The nation must pay the expense, or, as in the States, the high-minded citizen who possesses the means may share the burden. But it is right that the nation which reaps the benefit should primarily meet the cost. It is discouraging to compare British outlay with American outlay upon research in Universities. We are supposed to have learned a lesson by the war. Let us hope it will bear fruit when business revives in this country. And meanwhile this lesson has placed a heavy demand upon the Universities. For every branch of technology is crying out for research workers, and the Universities cannot supply them. The fact must be faced that the day of research has come in all the scientific professions and in every domain where technology or business comes into contact with the natural laws governing production and economy.

The Reactionary sitting in Senate, Council or Board, who would close the University to these demands, may indeed effect economies, but his economies are at the expense of the vitality of his University, of its very existence as part of the living, breathing, life around it. It is a cheap road, but it leads to stagnation, decay and death.

There is one subject which I must refer to: the compulsory presentation of Latin or of Latin and Greek by students entering

the older Universities. I know we are a long way from reform in this matter, but its influence upon the present subject is sufficiently important to necessitate a reference to it.

I think that, as regards research in the physical and natural sciences, there is no doubt that the compulsory study of dead languages is injurious and indeed seriously injurious. For two reasons this is so. It serves to keep out many from the Universities, and it demands of the science student hours of toil which would be better spent on living tongues, which would help him later on to extend his scientific reading. I am every day in contact with brilliant young men whose minds are absorbed in the interests of physical or natural science, but who cannot read a German book, and read a French one only with difficulty. These young men have spent many school years during which the study of Latin and Greek absorbed about one-third or one-fourth their total available study hours. What have they got for it ? They cannot read a Latin author or a Greek author at sight. It is true that without their Latin they would not have attained the Degree of the University of Dublin. The pro-classic says their minds are the better of it. Well, I freely admit that much mental training was involved, but I do not admit that a sound study of French and German would not have done for them just as much. Nay more. In this controversial question one point I have never seen referred to : the mental influence of a spoken language as contrasted with an unspoken language. The mental development required for the exercise of the spoken tongue is not called out in the study of the dead languages. Its influence is considerable. It is an exercise in quickness of co-ordination of thought and language, when we are in the earlier stages of study : and later, as a means of interchange of ideas, it is priceless.

Now I think those who sit in authority should at least seek to grant the scientific man the option of entering his sons for a Degree which would possess equal dignity with the Arts Degree, but for the attainment of which the classical languages should be optional—not compulsory. Some years ago, some of us endeavoured to effect this in the University of Dublin. We failed. We failed because, while a B.Sc. Degree with optional Latin was not condemned, it was determined that such a Degree should not rank as of equal academic importance with the existing Arts Degree. It should not, in short, serve to qualify for the professional Degrees. Obviously this was a fatal disability to attach to it, and the scheme perished.

I shall say no more upon this subject. But I must admit that, while my own mental views upon it are clear, I feel hampered by

finding myself in opposition to many whose views in other matters I have greatly respected.

Referring, for a moment, to the States, perhaps the most striking feature of American Universities, as viewed by the British visitor, is the prevalence of research, and the lavish provisions made for its prosecution. It extends into every branch of University work. Special stress is, however, generally laid upon certain subjects. What these subjects are seems to depend upon the initiative and forcefulness of particular teachers of eminence either past or present, who have been associated with the University. The great Research School of Education in Chicago, of which Prof. Dewey seems to have been the chief originator, may be cited. Highly organized and carefully staffed Elementary and High Schools are here attached to the University for research in Pedagogy. The Nutrition Laboratory of the University of Illinois, founded by Prof. Grindley, is another instance. The State Universities are very often in close touch with Agricultural research, and not only benefit agriculture thereby, but extend the influence of the University over the State by the valuable assistance given to the agriculturist. In our own country there is no class of the community more in need of such University influence than the agricultural. They are—in Ireland—not only ignorant of science, but are strongly anti-scientific. This applies almost as much to the so-called educated classes as to the small farmer.

For research in Experimental Science and Chemistry and Natural Science, extensively equipped departments are provided in all the great American Universities, and Technological Institutes. The equipment is on the most lavish scale. Everything possible seems to be done for the student. It seems invidious mentioning one where many are so very good. Yale left an indelible impression upon my memory. Prof. Boltwood spoke very modestly about the splendid suite of research rooms through which he led me. No one can visit the States without coming away with many such mental impressions. It is impossible to forget such things as the great Medical Schools of Harvard and St. Louis, or the Dental School of the University of Pennsylvania, and the endless research schools in Mechanical and Engineering Science, where, in some cases, the huge trans-Continental locomotives from the railway are brought into the laboratory on sidings for investigation by the student. There is research in everything. The American recognizes to the full the value of the mental attitude induced by research, and this recognition is not confined to the University Professor, from whom it may be

expected, but extends, so far as I could gather, everywhere throughout the States. The conditions in my own country (Ireland) appear correspondingly disheartening.

The reproach that many students fail as research workers, while it has foundation in fact, is not a fair one. For it ignores the educational value of even elementary research. I believe the outlook of a student who has carried out one single research of an elementary kind is different from that of one whose outlook is derived solely from the text-book and the examination. He learns first-hand the mental standpoint of the investigator. He gets ideas of scientific truth and of the legion of errors which lie in wait around it, as may in no other way be acquired. He sees the plausible, *primâ facie* conclusion break down under the control experiment, or in the light of the inexorable requirements of other participating laws of nature. A new conception of the use of mathematical analysis and of careful observation is created in his mind. More generally he learns the necessity of " thinking round " his subject.

These things he learns in some degree even if he is only of average capabilities. If he is one of the higher spirits the interest of the work seizes on him and calls out every power—latent and developing—wherewith he is endowed. These higher spirits work out their own destiny. I shall not dwell on the ways of genius—but rather upon research as an instrument in the education of the less gifted minds. I turn, therefore, to the interesting question : " Is it possible to successfully teach research ? " To teach its methods and its spirit to the average student—whether of science or of the " humanities "?

The answer I would give unhesitatingly is " Yes." But I would be careful to define that this does not imply the genesis of an original thinker from ordinary material. But it implies just as much as when we say we can teach students classics or mathematics.

I plead, therefore, for lectures in our Universities devoted exclusively to studies in research. And I would admit to these lectures students both of junior and senior standing, *i.e.*, the beginners in science as well as those working for the Ph.D., as now instituted in all British Universities.

Of course I am not now referring to systematic lectures in this or that branch of science. These are essential to the training of the average student. I mean something different. I would define research lectures as mainly relating to the Professor's own experience, and to that of his assistants and co-workers ; each worker contributing one or more lectures to the University course in research. Their subject-matter would relate to the

objects aimed at by the research, the difficulties attending the work, and how they were surmounted. Such discourses might be supplemented by others of an historical or retrospective character. These might in some cases be delivered by Honour students, and would refer to classic researches of the great masters. For recounting these, experimental illustrations should be given. The inspiration to be derived from such retrospective studies will be known to all who have read the original memoirs of great investigators. There need be no extra call upon the Professor's time. He would simply substitute these for part of his existing routine lecture work.

In a word, the foregoing suggestion is based on the view that the Professor is at present too much tied down by routine courses. There is a sort of idea prevalent that it is not fair to his class that he should tell them of his own work, but that this should rather be kept for the academy and for the outside world. Well, I think it *is* fair ; and I believe that, with reasonable usage, the best thing he can do for his class is to tell them of his own work. If this was admitted in high quarters it would be more often carried out. I can imagine nothing more stimulating than a few lectures each term on the work progressing in the laboratory of the Professor and his co-workers. For not only is the student brought into touch with the making of knowledge, he is sure to receive the story in the language of fresh and enthusiastic interest.

I am aware that occasionally and at scientific associations within the University, such discourses are delivered. I would make them a part of the sessional work of the University. If not legally obligatory on the Professor, it should be morally obligatory on him to contribute a few such lectures every term, or at least every session. I do not think it would impose additional labours on him. Fresh from his work, but little rearrangement would be required, and his facts would be ready marshalled in his memory. Nor would the telling of his ideas fail to react upon the lecturer—to his benefit and to the elucidation of his subject.

The one central result aimed at is the presentation of research as something of paramount importance. It should stand for the highest goal of University effort. For in truth, success in the making of knowledge is the crown of all human endeavour, and as such the student should be taught to regard it. Teach him this one great ethical truth, and whatever else he may accomplish or fail to accomplish in his student days, he will enter on his life's work an enlightened and a valuable citizen not of his own country only, but of the world.

J. JOLY.

THE UNIVERSITIES AND RESEARCH.

Fourth Paper.

Training in Research.

In joining this discussion may I say at once that it is the Natural Science side of University study which I have chiefly in mind throughout my remarks, although I find it difficult to think that Natural Science diverges so fundamentally from a number of sister studies that it requires a discipline widely differing from theirs. The cultivation of knowledge is one of the functions of a University, and for the cultivation of scientific knowledge research is, of course, a main means; in fact, the main means.

A University has also among its functions the distributing of knowledge by teaching given to students. In this latter respect research also has its place; and it is to this latter aspect of research that I will confine the following remarks, bringing forward two points on which I am glad to have this opportunity of speaking.

One of these points, and I may take it the earlier, concerns the importance of engagement in research as part of the training and qualification for a teacher. In order to teach Natural Science adequately to University students the teacher himself, in my belief, must be actively prosecuting research in the science which he teaches. Natural Science is a living and growing branch of the tree of knowledge. It ramifies and spreads by growing points. It grows by research; and every growing point is, so to say, a focus of research. Only by prosecuting research can one understand the growth which is Science's best evidence of life; only by taking part in the research which engenders and is engendered by it can the teacher fully enter into the life of what he is teaching; and only by entering fully into the life of his science can the teacher hope for that forceful and first-hand quality of view of it that can convey in fair measure to others, even at second-hand, the semblance of a living thing, fruitful, inviting enquiry and cultivation by them. Without research of his own behind him the teacher fails both in the freshness and the mastery required to make a good and appealing teacher to University students. A University class quickly recognizes and appreciates the first-hand touch of authority pertaining to a teacher who is at grips with his subject from the research side. It is an element of appeal to and of influence over pupils which nothing else can replace;

its absence paralyses every other effort. In short, University students soon realize that, unless their teacher actually takes a share in the growing life of his science, he cannot make that science a living thing to others.

Recognizing this—and many have recognized it before me—two practical consequences follow. One is this, that every teaching appointment in Science in a University should be so schemed and regulated as to provide ample time and opportunity for the prosecution of research by the appointee; prosecution of research by the teacher being, of course, one of the conditions of his appointment. A second corollary is this, that not less than a certain measure of accomplished research should be regarded as an essential qualification for the appointment of a University teacher in Science.

A second point to which I would call attention regards instruction in research as part of the course of training provided for students, and quite especially for students taking an Honours degree. In Biology a great step forward was that accomplished by Huxley when he introduced practical laboratory work as a part of the routine teaching for even elementary students. That was more than half a century ago. Physics and Chemistry have still longer had their practical exercises as an essential feature in every student's course, even at school. At the University the time has now come to take another step forward, a step, indeed, already taken as regards Chemistry in this University, namely, to require from every Honours student in Science a certain modicum of research as one of the qualifications for his degree. The routine practical exercises given to our classes train for routine steps such as are involved in practical investigation, thus: qualitative or quantitative analysis in Chemistry, galvanometric and optical measurements, diagnosis of generic form by dissection, and so on. This is excellent, and admirably done, but it alone does not adequately equip a student for what is, after all, in many cases the most important demand made upon a scientific career, namely, the envisaging and attacking of new problems. One might almost say that at present our practical instruction teaches tactics, but omits strategy. What is needed is to give every science student an excursus in research. The prosecution of a research is the only means of instructing in research. The excursus need not be a long one, but it is the sole means for the end required.

It might perhaps be thought that this need could be satisfied by practical exercises of the ordinary kind save with some factor in them left for ascertainment by the student without previous

appeal to exercise book or to teacher. This, as experience shows, meets the case but imperfectly. Something more is needed; something less stereotyped, more vital, more ambitious; something that will, in its course, demand thorough detailed knowledge of a limited piece of the whole study while co-ordinating with it the general principles of the whole. Another way has been to guide the student almost from the very beginning of his practical work to remake, so to say, with the facilities of present laboratory equipment, certain of the discoveries which have dominated the history of his science. This method, admirable in several respects, has certain disadvantages. One is that it contains a certain degree of "make-believe"—the student feels that the discovery he is asked to make for himself has, after all, been made already, and to a pitch of refinement beyond any he can hope for, and that his text-book contains full statement of it. Another drawback is that the plan entails for the pupil a disappointingly slow arrival at some of the fundamental facts used early in the science that provide the basis for its common principles. He perceives that, were he not thus hampered, his progress would be quicker and, he inclines to think, might still be as sound. These untoward objections do not arise in the case of the scheme mentioned at the outset, by which, toward the end of his student's course, he is, with some equipment of knowledge and experience, put on to a problem the answer to which is unknown. What would seem to me preferable, therefore, is that the student, not at the beginning of his course, but towards its end—let us say during the final year of his Honours Course or during some part of that year—should be started on an actual research problem of the day of such nature that to its solution he may, with faithful work on his part and supervision from his teacher, expect to contribute successfully. His measure of successful result, however, matters less than that he should actually embark on the voyage, himself at the helm, toward some horizon of his subject. As to direction, it will be sure to be in some direction whither others also are steering at the time, and thus, with mutual help and criticism for each explorer, criticism of a new kind, and touching untried qualities in himself. It is obvious that such an excursus must come late in his student course. As to how much time it should demand, that is a matter about which individual opinions may well differ. Some teachers may consider it should occupy most of the whole final year; in my view it should certainly occupy not less than a third of that year.

C. S. SHERRINGTON.

Discussion.

PROFESSOR C. V. RAMAN, M.A. (Calcutta and Benares): The case for research in Science has been so ably presented by Prof. Joly that perhaps it is hardly necessary for me to say anything on the abstract question. You may be more interested to hear what the two Universities, of which I am a delegate are doing for Research. During the past few years they have been doing a great deal. But, perhaps I should first say that I am personally in cordial agreement with what Prof. Joly has remarked about the study of dead languages in relation to men of Science. I am in entire sympathy with what he said, as I can well remember my own tribulations at a period when I was studying Physics in the laboratory and was compelled to devote attention to Sanscrit grammar. When I look back upon that, I am inclined to think that some of the subjects which are labelled Humanities might be more appropriately referred to as Inhumanities. Coming back to the question of Research, there are a few things which I particularly wish to refer to. I have had the advantage of a conversation with Prof. Sherrington, in the course of which he mentioned some very important points. One of them related to Research in connection with the teaching profession. I hardly think any one would question for a moment the importance of Research training for the teacher. Speaking for myself, as a humble student of Science, I always felt that I never knew a subject until I had tried to explore its frontiers, and never really quite grasped a subject till I had succeeded in advancing it at least a little by my own Research work. I think the great leaders of Science in this hall will bear me out in this. I think it ought to be the rule —it may be a counsel of perfection—that no one ought to teach a subject in a University unless he has been a successful researcher in it. I will go further and say that in the world of administration as well a Research training is an extremely important thing. It is not a presumption on my part to say that, because for ten years I was myself an officer in the Government of India in an Administrative Department, and I think I can venture to say that there is no training more valuable to the man of affairs than to have been himself in contact with Research. I have myself found over and over again that one who is filled with the spirit of Research would tackle a problem with a straightforward directness which he otherwise could not have shown. I think it ought to be realized that, even for the man of affairs, even for the administrator, it is a good thing to have absorbed the spirit of Research.

I will now pass on to give you an account of what Calcutta and Benares have done during the past few years. All that I have to tell you is comparatively recent history. It is unnecessary for me to dilate upon what we might have done if things had been different from what they were. I almost hesitate to mention what the position of India to-day in physics, for instance, might have been if we had had the good fortune to get some really brilliant men sent out to us, as was the case with Japan in the sixties and the seventies of the last century. We have not had that advantage, and I must say in the matter of the quality of the men sent out to us, we have been sadly disillusioned, and we have had painfully to learn the lesson of self-reliance. Many departments of Research have been built up in the Calcutta University of recent years, and large staffs of teachers collected, most of whom have done something to advance their particular branch of knowledge. Valuable work is being done both in the Sciences and the Humanities. In regard to the Humanities, the study of ancient Indian history and culture, Indian economics, anthropology, philosophy and other subjects of that kind, has been greatly encouraged, and schools of Research have been established, largely owing to the magnificent energy of one who is or should be known all the world over as a great lover and patron of learning, Sir Asutosh Mookerjee.

In the Departments of Physics at Calcutta and Benares, with which I have personally been associated, a strenuous attempt is being made to build up a School of Research: we have been hampered greatly by the want of laboratory equipment, but we hope that before many years are over we shall have the privilege of possessing a first-rate School of Research. Even the results so far obtained are not entirely beneath notice; but for some years to come we have still to rely on the help of great British leaders of Science such as those I see in this hall to-day—we have to look for assistance from the British Universities. We want of your best; we do not want the people you don't care for; we want the assistance of your great leaders of Science—I should not perhaps mention names—and we want the assistance for a particular object. We wish to send our most promising young researchers here after preliminary training in our own Universities and wish them to carry back to India that fire and inspiration which your foremost scholars can impart; and if, as we hope, your leaders of Science will give of their best to help us in this direction, we shall remember that help with gratitude and affection for many years to come.

PROFESSOR F. D. ADAMS, D.Sc. (McGill): In the five minutes which have been assigned to me, I wish merely to touch upon two points of the many which have been opened for discussion by the admirable papers presented this morning. In the first place we note that one of the most remarkable changes in University usage and University practice in the last decade is the increased attention which is now being paid by our Universities to Research in Science. We have been told by Sir Donald MacAlister at one of the meetings of this Congress, that, since the meeting in 1912, courses leading to the Degree of Doctor of Philosophy have been inaugurated in every University of Great Britain. The distinctive feature of a course for the Degree of Doctor of Philosophy, as these courses are given in the German Universities where they originated and in the great Universities of North America where they are so extensively developed, is that the student shall be instructed in the methods of Research by conducting a research himself under the direction of his professors, and we thus see that a great many small researches extending perhaps over an academic year will in future be carried out in the British Universities. How are we to avoid frittering away our time if these researches do not contribute to any distinct advance in knowledge in any particular direction? This is always a danger.

I would suggest that one means of avoiding this, is by focussing a number of small researches on the investigation of some important problem. I might illustrate this by what has been done in the Faculty of Applied Science of my own University. In the Department of Mining, for the last ten to twelve years, a whole series of researches have been carried out by students, each of comparatively little value in itself, but all having been planned to contribute their share toward the elucidation of a larger problem in Ore Dressing, with the result that a very important law has been discovered which is of great interest and significance.

The experience of the Carnegie Institution of Washington is of great interest and value in this connexion. This Institution was founded by Mr. Carnegie in the year 1902, and endowed with the sum of ten million dollars, since increased to twenty-two million dollars. The trustees of the Institution in the first three years of their work made a small number of large grants for Research, each amounting to twenty, thirty, forty, fifty, or up to a hundred thousand dollars, and a large number of grants of small amounts running from two hundred dollars to three or four thousand dollars, and found that the value of scientific results secured by large researches was immensely greater than that yielded by the

small researches. So impressed were the Trustees of the Institution with this fact, that they made no further small grants and concentrated their immense resources on great researches, which have produced immensely valuable results. In the same way, the University departments by concentrating their investigations on a certain range of problems will be able to secure results which otherwise would be unattainable.

Again, the importance of establishing scholarships for Research in various Universities cannot be too often emphasized. They have been found of great value in the Universities of North America. There such scholarships enable the Universities to draw to them men of small means but great ability who are desirous of devoting their life to scientific studies and scientific research.

In Canada the Government of the Dominion, through the Council for Scientific and Industrial Research of Canada, are making annual grants aggregating forty thousand dollars, or ten thousand pounds sterling, for the establishment of Bursaries, Scholarships and Fellowships for Canadian students, these to be held in Canadian Universities in those departments which are properly equipped and staffed for the conduct of Scientific Research. A large body of able young men and women are thus being trained in Industrial and Scientific Research in the Canadian Universities. In this connexion, one may bear in mind an observation once made by a governor of Harvard University, to the effect that one of the important functions of the University nowadays is to provide a way whereby a man of wealth may avoid having written on his tombstone that saddest of all epitaphs: "And the rich man also died and was buried."

PROFESSOR J. N. DAS GUPTA, B.A. (Calcutta): In my few and necessarily brief remarks I propose to confine myself to history, and more especially to Indian history. For to me, as to all interested in India and in the welfare of the East, it is a matter of the utmost regret that no comprehensive history of India yet exists; a history, that is to say, which would give us an insight into the genius and characteristics of Hindoo civilization, which would explain to us the underlying principles of the Mogul Administrative System, and, at the same time, trace the course of events and explain the circumstances which led to the foundation and consolidation of British power in the East. I have thus spoken of the various periods of Indian history, because I am anxious to indicate my belief in the organic unity of the whole and to emphasize the fact that these are not so many air-tight compartments with no reference to each other. In my view of

the matter, it would be unhistorical and untruthful to regard the rise of British power in the East as an isolated fact, as the inrushing of an European element into an Asiatic void. I would venture to urge that, for the preparation of such a history of India, a good deal of preliminary spadework remains to be done. Traditions, folk-lore, inscriptions, coins, architectural remains, must all be laid under contribution; and I venture to place the view before this assembly of my fellow workers, that work of this kind is best undertaken and best achieved in a University by a band of young, enthusiastic workers, working, so to speak, in an historical research workshop or laboratory under the guidance of older teachers, gifted with imagination and wide vision, skilled in comparative methods of study, and experienced in handling and sifting evidence. I am glad to be able to add that this is exactly the kind of work which we are attempting in our University Post-Graduate History Department. Out of our scanty resources we have established, under the guidance of that great administrator, Sir Asutosh Mookerjee, who was referred to by my colleague, a Chair of ancient Indian History and Culture, a Chair which would inevitably remind us all to-day of the new Chair which the University of London has just established in connexion with the School of Oriental Studies in London; and a band of young workers in our Post-Graduate History Department has already published a series of historical monographs of striking interest, some of which have received commendation within the walls of this ancient University from teachers of repute, such as the late lamented Mr. Vincent Smith.

I venture to place before this gathering of my fellow teachers a conviction which steadily grows upon me in this connexion as the years roll by. I feel that for the reconstruction of the history of my Motherland, especially of that dim past age which we speak of as the Vedic Age and the Post-Vedic Age, we must go for at least a part of our materials to our ancient literature. Thorold Rogers, in this University, used to speak of an economic interpretation of history. It strikes me that in India we must have an historical interpretation of our literature; and here, again, I am glad to be able to tell this Congress that the Calcutta University is working on the right lines. It is encouraging the study of the Indian vernaculars, and the result of its recent endeavours in this direction is seen in a remarkable way. It has given a strong stimulus to the study of our ancient vernacular languages and to the publication of a series of books in the Indian vernaculars, which, to my mind, affords a striking example of the work which it is in the power of Universities to achieve by encouraging the

spirit of Research amongst its graduates and undergraduates, as it is also to my mind evidence of a remarkable literary reawakening amongst our younger generation.

PROFESSOR SIR ERNEST RUTHERFORD, M.A. (Cambridge): The subject we are discussing this morning is, to my mind, and I think to the minds of many scientific men, the most important that has been dealt with in this Congress, for on this question of Research in general, and the lead that the Universities can give, will largely depend the reputation of this country as an intellectual centre. In the future, the Universities will not be judged so much by the number of their undergraduates or by the extent of their endowments, as by the magnitude of their contributions to knowledge; and in the course of my travels in foreign countries in Europe I have been impressed by the fact that this country is judged, not by the size of its exports or its fleet, but by its contributions to knowledge, and as a whole I have found that the opinion in which we are held is not so high as one would like to think. It appears to me that we are at the moment in a very important stage in our University history. We have to play our part in developing the newer knowledge, not only for this country for ourselves, but also for our Dominions, and at the same time take our proper share in the higher education of that great flood of post-graduate students which is now in movement and which will grow rapidly in the near future. In the past, Germany diverted a large part of this stream, and quite rightly, because she provided for it. She had a very large number of teachers, enthusiastic and devoted to their subjects, who welcomed the foreign student. If we are to take our proper place as an intellectual nation, we must put our University house in order so that we may be in a position to play our part in this great intellectual revival. This will depend on our capacity to open our doors freely and to attract the most promising of the post-graduate students of the world. Now it is very easy to talk about this matter, but it is much more difficult to provide a practical solution. We know that the post-graduate student does not, as a rule, come to a particular University because of its name. He comes to a particular University because of the presence of a certain teacher, under whom he wishes to study. So it follows that, if we are to take part in this movement, it is of the first importance that we should have among our University teachers men of capacity and enthusiasm who will attract students from the outside world. I quite agree with many of the wise remarks that have been made about Research in general this morning, but a practical problem of pressing importance is,

How should Research be developed in our Universities ? It is very difficult to accomplish much at the moment on account of the great increase in the student membership which absorbs the greater part of the energy of the teaching staff in routine work. This pressure will probably be lessened in the near future. I would like to point out that one of the most important parts of the Vice-Chancellor's work is to provide for post-graduate instruction at our Universities. The undergraduate side of the work is, I think, on the whole, well looked after, but there has been very little systematic attempt to develop post-graduate schools in the various Arts and Sciences in our Universities. I am sure that our intellectual eminence will rise or fall according to our success in this matter. The first need of all is men. You cannot have each department in the University a one-horse show and expect it to be a centre of attraction to the outside world. You must multiply teachers, and the best kind of teachers, and you must allow them opportunity for their individual research, and time also to develop the post-graduate side. Apart from a training in Research methods, a student for the first few years after ordinary graduation should be provided with systematic post-graduate instruction by the ablest men in the University. This instruction would take the form of lectures on the special topics in which those teachers were particularly interested. This means additional staff and expenditure, and I appeal to the heads of our Universities to take care that they are not diverted by the magnitude of the undergraduate body, but see plainly that the future of the Universities and the reputation of the countries to which they belong will ultimately depend. to a large extent, on the development of post-graduate training and Research. We have never had in our history such a great opportunity as presents itself to us at the moment. Much has been done to take advantage of it, but we are very liable during the next year or two, unless some very strong movement is made, to lose our chance of becoming one of the leading centres of the world for the higher education of mankind.

PROFESSOR J. J. R. MACLEOD, M.B. (Toronto): There is one aspect of Research that I think deserves a little more emphasis than has been given to it this morning. I refer to Research in Medicine. I suppose most of you are aware that a great deal of the hard work in Research in this field before 1919, emanated from the laboratories of Germany. I do not mean to say that all of the best work came out of those laboratories, but the detailed work that is necessary to the filling-in that must take place

between the discoveries of great men and the practical application of the results, came very largely from that source. During the last fifteen to twenty years a great change has taken place in medical training on the American continent, particularly in the United States, and it is safe to say, I think, that a very large proportion of the detail work in Medical Research is coming from the laboratories of the United States. That is a most interesting and a most important development. In England and the British Empire we are not, in my opinion, contributing our full proportion of this work. We have the most eminent investigators in Medical Research, but we lack deplorably in detail workers—that is, in men who by work in the laboratory and clinic are filling in the details and putting to the test the fundamental discoveries of the great investigators. Now I think it may be of interest and importance very briefly to consider the reason for the success of this type of work in the American continent. It is very largely because the student during his Medical course is not trammelled by a system of artificial examination standards. He is examined in his own University, and his instructor, therefore, is able to encourage him in whatever lines he thinks best for his welfare. In most of the large Universities and Medical Schools in the United States the importance of Research is emphasized not only by precept, but also by practice, so that the better students get the research outlook. The students, after adequate training in the fundamentals, are encouraged in every way to participate in Research work, not with the idea that they are to make discoveries and publish papers, but so that they may appreciate what is meant by Research and thus be placed in a position to contribute afterwards to the development of accurate knowledge. In various schools in Canada, the example of the States is being followed as closely as conditions will permit. We look, however, to the Mother Country for a complete fruition of our plans. We look to the Mother Country as a place where we may send those men who have been enthused in research work to complete their training. It is obviously most important that this be done in the Mother Country, and that our students be not compelled, as heretofore, to go to Germany, Austria, and other continental countries for such work.

I should like, finally, to refer to what I believe to be a very practical plan to make this possible. I refer to the work of two committees in London. One of these is the Medical Research Committee, which as you know, has been doing important work in the Research field during the last three or four years under the direction of Sir Walter Fletcher. Through this organization, men

who had already received adequate training by us could probably obtain opportunity to continue in Research work. But it is not so much for that type of man that we are anxious; it is for the man who has been enthused, but has not yet had an opportunity of really participating in Research. He wishes to come to this side for a year or so in order to broaden his outlook, and to complete his training. To meet this requirement, I would call your attention in the second place to a Report of the Post-Graduate Medical Committee, under the Chairmanship of Lord Athlone, which embodies very admirably all the necessities in this field and which suggests a very practical method by which they may be met: this is, that one of the large hospitals in London be taken over as a post-graduate School, and that it be properly staffed and equipped as a place where graduates in Medicine, are given opportunity for advanced work in fields of activity to which they are particularly suited. I sincerely hope that for the extension of Research in Medicine, this Report of Lord Athlone's Committee will be adopted and put into effect. If some such scheme is not developed, I fear that we will not succeed in having our students come to the Mother Country for what, after all, must be the most important part of their instruction. Unless the Physician and the Surgeon look upon their work from the Research point of view, then Medicine and Surgery must fall back into empiricism, progress become impossible, and scientific treatment remain undeveloped.

Professor W. J. Dakin, D.Sc. (Western Australia): I feel that I can only add a humble contribution to this discussion, but there are perhaps one or two things that a man who has been out to the other end of the world may have seen, looking from afar. In the first place, I think that a professor in this country is not able to devote—I am speaking of my own position—perhaps, as much time to Research as he should, if he is to teach the whole realm of his subject. In Germany, before the war, a student could move from University to University in the course of his work for the ordinary Degree. That meant that he could hear lectures from experts practically throughout the whole of his course: it also meant that the professor could confine himself more or less to the work in which he was the best equipped. This is not the case in this country, and in particular in London where it could be carried out. I have seen three different institutions competing against each other for students, and the professor in each of those institutions having to teach the whole of his subject. There at all events is a tremendous waste of energy. I think that greater

opportunities should be given to students working for their Degree in this country, to move from University to University before they reach the stage at which they will commence Research. My second point is—and I am speaking now of my own subject, Zoology, with which could be included Botany—that very frequently, in order to carry out Research, a student undergraduate or post-graduate has to leave his University and travel afield to get his material. Opportunities are not given by our Government or by branches of the Government in the Colonies to get that material, opportunities which they have given to foreign Powers. Let me illustrate this from my experience in Australia. It seems rather tragic that a student of the University of Western Australia must look for the chief descriptions of the zoology of his country in German books, the fruits of a German expedition sent out in 1905. In Australia Research in Science is of paramount importance, partly because the country depends upon the application of Science—application to Agriculture, to Mining, and so on—and partly because there is a fauna and a flora which are liable to extinction, and a native population which is rapidly dying out. There will be no chance of Research into the customs, traditions and tribal lore of the aborigines, and much less chance of Research into the habits of the native animals and plants in a few years' time; yet the members of the Universities of Australia have not been able to obtain the facilities that Germans and other foreigners visiting the country have been able to obtain. That is not the fault of Australia; it is the outcome of the methods of the British Government of the past and of the representatives that they send abroad. Thirdly, I would like to point out to the English Universities that they have not fully realized the amount of work which has been carried out in the Australian Universities, the amount of Research. It is a long way from here and the workers have perhaps been under much greater difficulties than professors in Canadian Universities, who can easily cross to this country. Perhaps as a consequence you have removed from Australia such men as Bragg, Elliot Smith and Wilson, to mention but three names—there are others—who have come to this country because they find in England facilities which they might have had in Australia had their colleagues in English Universities realized the value of the work that they were doing and had helped them. When we were founding a library in the University of Western Australia, America and Germany in 1913 sent us the literature we asked for, in abundance, but very little came from this country although requests were numerous.

PROFESSOR SIR ARCHIBALD GARROD, D.M. (Oxford): There is one aspect of the question under discussion which I want to put before this meeting. Original workers fall into two great classes, for there are primary and secondary investigators. There are men who cannot help doing original work, and others who will do such work, and do it well, if they are guided and stimulated. The secret of the large output of original work in Germany of recent years is that in that country full use is made of the secondary workers, and there are at least thirty secondary workers to every primary one. The primary investigator will investigate, however he be situated—Galileo went on investigating in the dungeon of the Inquisition. There is no need to teach such men to do original work. The secondary worker will not investigate unless he be guided or instigated, and the problem which we are discussing resolves itself into this: How to get the primary workers to stimulate the secondary ones. Obviously the Professors of our Universities should be primary investigators where possible, and no one can be a really good professor who is not, to some extent, an original worker. But the primary investigators themselves fall into two classes, those who are "hormonic" and those who are not. There are men who do magnificent work themselves, but who lack the gift of inspiring others; and there are others whose own work may not be so great nor so good, but who have the gift of radiating activity, and of setting others to work. Obviously the ideal University Professor needs to be a radio-active, primary worker.

In considering the methods of endowment of Research, we must remember that original investigation cannot be forced. It must lead the worker, not be dictated by him. Much of the best work ever done has been carried out by men who began to investigate some special subject, but who, following a side alley, discovered facts which had little bearing upon the subject upon which they started. If you say to a man, "Here are three hundred pounds for you, but you must furnish me with the plan of your investigations before you start," you will not get much return; but if you select a man who has shown that he is endowed with the investigator spirit, give him the money and say, "Go and find out," then you will get good work in return.

Undoubtedly our Universities can do much in stimulating the spirit of investigation in their students, and in setting the secondary workers to work. Thus will the output be multiplied thirty, forty, or fifty fold, and this, I am convinced, is the true function of our Universities in furthering original investigation.

P. GILES, Litt.D. (Cambridge): My only apology is that I am the temporary resident Head of a University which I think was amongst the first to organize Research; and we had a very interesting and radio-active address upon the first-fruits of that investigation by Sir Ernest Rutherford. But, as I am speaking for Vice-Chancellors, and have had to have an eye always upon the purse, I should like to say that in the beginning of Research it is very important that the subject should be worthy of the trouble that is going to be taken. I can think of a case some years ago of an overseas student who presented himself in Cambridge, and when he was asked what he was to research upon he said his subject was the book-plates of the different College libraries, which would form no doubt an extremely interesting subject for a paper in the proceedings of an Antiquarian Society, but is certainly not suitable to occupy, with its supervision, the time of busy officials in a great University. There is a further point with regard to the organization of Research in this country which is of importance and which has often been brought before me, and that is, excellent as our Public School system is, it does not, generally speaking, encourage very much a spirit of enquiry. A brilliant Frenchman, nearly forty years ago, after studying the educational system of this country, remarked that England seemed to be a country where the teachers said the lessons and the pupils heard them. There is a considerable element of truth in that. I mean there is the difficulty that a great many young men who are not at all lacking in capacity have never realized, that the last word on all the subjects they have been taught has not been said. They consider what they have been taught is all that is to be known on that subject.

One thing that struck me to-day was the difference between this morning and the last two or three mornings. We had been hearing on the previous days how much more the Universities ought to do, and I began to think that we ought to define a professor as a man who could make forty-eight hours out of twenty-four, but this morning we have been told that it is very important that the professor should have leisure. I quite agree with that view. In all Universities, both big and little, the most important members of the staff are overworked. They have far too little time to think out the important parts of their subject for themselves. I was struck with the remark that Prof. Joly made, which I heard also many years ago from Prof. Chrystal, of Edinburgh, that probably in Mathematics of all subjects, it was most difficult for a young man to do original Research upon his own account, because he was so far behind the fighting line; so

much had been done that the amount that could be covered in any undergraduate course did not bring the pupil nearly to the point where Research would probably begin. Another subject of which that is true is Ancient Philosophy. It is extremely difficult for a young man to make any advance that is worth the time and trouble in the subject of Ancient Philosophy. I do not mean that no advance is possible, but that a man at his stage of attainment is not equal to doing it in any reasonable length of time.

In regard to the seminar which Prof. Firth recommended to us, I am all in favour of this kind of teaching, if well organized, but there was a difficulty in the German seminar before the war, and that was that the young student, who perhaps is more docile in Germany than in this country, became the "devil" of the professor. If the professor was a classical professor the student spent his time in finding out how many times a particular word or phrase occurred in a classical author. That is good enough work for a Gibeonite, but is not original Research. There was a further point made by Prof. Joly which interested me. He and Prof. Raman thought that the study of ancient languages was a detriment to the study of modern languages. I cannot argue the point, but I will give you an illustration. If you will look at a linguistic map of Europe and draw a line from the White Sea to the Black Sea, you will find that it passes through areas where a very large number of languages are spoken. The whole of the languages along that line were mastered by two men—one of them a member of Trinity College in this University, and one of them a member of St. John's College in my own. The whole of the languages were controlled for the purposes of the Intelligence Department by these two men. The Oxford man I know, too, as a very distinguished student of classical learning. The Cambridge man is known in his College as a student of modern languages, but I observe in the published list of the University that in the middle of his modern languages study he took a First in Sanscrit. That line was carried across Asia Minor by a third student, who was formerly a classical scholar of Trinity College, Cambridge, who was very familiar with dialects of Irish as well as with Turkish.

With regard to the point about Medical Research, that is a question which we have been discussing very much in Cambridge in the last two years. It was brought home to us very emphatically because, at the end of the war, some of the medical men of one of the Allied Powers made a formal complaint through their Ambassador that they had been working in the laboratories of Cambridge, and did not get any recognition whatsoever. The question came round to me, and I had to point out that they were

in no harder case than members of other Universities of the British Empire. I do not think that in this country any man is able to take his first medical Degree in one University, and his second medical Degree in any other. Undoubtedly there are ways by which these men could be helped. The difficulty was that nobody who was not a member of the British Empire had a registrable qualification to practise medicine and that, for example, the Diploma in Public Health, being a registrable qualification limited to candidates with qualifications recognized by the General Medical Council, could not be given to such a person. The University of Cambridge has gone into the matter and devised another Diploma which will be open to all the world, the Diploma of Hygiene, so that it will be possible for men to come and study and get recognition of their work, although they have no registrable qualification in this country. We have also had under consideration another question. It is impossible in a University situated in a rural area as Cambridge is for the pursuit of Surgery to be carried very far. We have not got the variety or the quantity of disease that is required for a large medical school, but we are able to carry on investigations in many allied studies, and in order that it shall not be said that a man comes and gets no recognition for his work, we are establishing the Degree of Master of Science, which will include the medical sciences as well as the natural sciences, and which will be open to any student who will study for a reasonable length of time these subjects in the University of Cambridge.

All these points are extremely important. There is one point which is perhaps in some ways more important than them all, and one to which Sir Ernest Rutherford is very, very alive, and that is the question of expense. In many departments Research is very expensive. Take the case of radio-activity. I know of one student whose cost for the year will certainly very much exceed £100. No University in the world is able to stand that without aid. Assistance must be found. One possibility might be that the Government of the country from which the student comes should contribute somehow towards the expenses of the laboratory. I am not prepared to say what is the method, but it is quite clear that some method of that sort is required. The further help that is required is with regard to the library. It is impossible to carry on Research in many departments—it is difficult even in the large Universities—because the number and variety of scientific periodicals is vast, and even in the University of Cambridge it is very difficult for us to cover all the different sides of activity. When you have done so to the

best of your ability, where are you going to store your goods? We are faced with that difficulty very seriously. Our library is chock full, and without assistance on a very generous scale, whether from private beneficence or otherwise, it will soon be impossible to house all our books.

L. R. FARNELL, D.Litt. (Oxford): Apart from my duty and privilege of being here as representing your hosts, I had a desire to remain a private member and to hear as much as I possibly could of the views of our distinguished guests that I might meditate on in solitude and turn to some good in the next two or three years as opportunity arose. I have already gathered much that will give me valuable food for thought, and I hope also some guide to action, but never so much as this morning, and I do agree that this is the most important subject that we have had under discussion, and I should not venture to occupy your time except that I may honestly say it has been a cause I have had at heart all my life, and I do consider it of the deepest interest to this University as to others. I may confess that what little opportunity of influence one's office gives one I shall use for no other purpose so urgently as to further this cause, and to make this University more a home for original investigation than it hitherto may claim to have been. The word Research has become a catchword, and, like all catchwords, seems rather soiled by too familiar use, but, for the sake of brevity, I will use it. Now about this University I am not going to say much, of course, because you have a vast vista of other Universities, but I think that probably hardly any other University—I know of none—has so much raw material for Research as this beautiful Oxford. I know the German Universities very well—I spent a good deal of my early youth there—and the Universities of the United Kingdom one has known either by personal acquaintance or by conversation, but the wealth of material in Oxford is quite extraordinary and, I think, unique. Here, for instance, we have an outlet for anthropology that no University in the world possesses in the Pitt Rivers collection; and here we have original anthropologists of a higher grade than Germany has produced. We have treasures in the Ashmolean and the Natural History Museum. We know the unique treasures of the Bodleian. Therefore we offer to the world singularly attractive material for post-graduate Research. It remains for us to organize it so that this extremely rich material may attract the worker and produce great and valuable results. There are many difficulties. We have heard to-day of the necessity of Research. We all agree. No voice

is raised against it, but there may not be so much recognition of it in actual practice. We have many difficulties confronting us, and I merely want to put before you two points that have not been quite thrashed out. There are certain troubles making pure Research more and more difficult. The enormous disturbance of society by the war calls upon all of us to go out with practical help to restore the fabric. We are all of us overwhelmed in business—Professors, Chancellors, Vice-Chancellors, Doctors, Masters; we are all sitting on endless Committees and called here and called there, and we cannot help obeying the call. There is so much to do of practical reconstruction, it seems as if we might be three to four years discussing things. In England generally there is this further difficulty. The moment a man becomes specially distinguished he is at once given some high administrative post, and I see with sorrow and regret many of my own friends—magnificent men for Research and Discovery, names that might easily rank with Huxley and Darwin—at once given a splendid administrative post and the world of Science knows them no more. Administration tends to swallow us all up. We have got to prevent it somehow. Every teacher in a high University such as ours must take a certain part, I think, fairly and morally, in the practical affairs of that place; otherwise it is unfair on those that do. He must to some extent shoulder his due proportion of the practical burden, but he must not let himself be so immersed in practical affairs, as has happened to so many men, as to neglect his higher and truer duties to his University. There is a further trouble. We suffer here from the conscientious teacher, the man who feels that, as his pupils depend on him, he is not really doing his duty unless he is almost killing himself in teaching them and in putting all day long something into them, so that they may say they have got their money's worth out of that teacher. That is a noble vice, but it is a vice, and it is ruinous to the mind of the teacher and bad for the young men. There is not the slightest doubt of it. One of our troubles has been in the immediate past over-teaching, and it certainly is very wearing to the constitution. It makes men, either physically or intellectually, die too young, and it does stale a man and prevent him from keeping fresh the new springs of thought and discovery. He cannot thrive under such a strain. Why is Research an inevitable feature, an inevitable condition, of high University teaching? It is due to a curious psychological fact. In teaching you cannot live upon your capital. You may have acquired a wonderful capital up to thirty-five or forty; the moment you stop and live on that capital you find that you are beginning to get

stale, and then another curious thing happens, that as teaching is a singular complex mesmerism between teacher and pupil, so your pupil discovers in a very short time that you are living on your capital and you cease to attract and influence him. Therefore, we must never live on our capital. If we wish to be the best teachers, worthy of a University, we have to go on as long as we can making new studies and researches and investigations, and either adding to the facts or thinking the old facts over again in the new light, which, of course, is part of original research. Thereby only do we remain living teachers. If and when that process is bound to come to an end, we ought to give up. I am not pleading the cause of Research for the sake of a coterie of specialists at all, but for the sake of producing a first-rate staff of University teachers, whether of senior or junior grade.

And, again, another trouble is here—and probably at Cambridge—our junior courses have had such glamour and pride attaching to them, it is such glory and honour to a Senior Wrangler, to a Double First, to a University Prizeman—all things belonging to that undergraduate period—that they have really done us harm. So much of the best teaching here has been concentrated on producing these young people, and the young person so produced has often got a billet, in which it seems he can live on his undergraduate glories for the rest of his natural life. There was once a cynic who summed up what he thought of Oxonian intellectual society by the formula: "There is nothing true and there is nothing new and it doesn't matter." If ever there was a person here who was capable of those utterances he was in a poisonous intellectual condition, and all one can say is that the society in which that was possible only produced that morbid specimen because the man in question had never genuinely tried to discover anything new; he did not know the difference between truth and falsity, therefore, he was pained and punished by the doom of saying "It doesn't matter." It is partly for the man's own sake as well as for his pupils' that one desires to propagate Research, because, whether you are discovering a new planet or a new fact about King Darius, it is the same; it is the same fascinating discovery of something new by which, as our friend, Sir Frederic Kenyon, has remarked, we can vivify and make as new the old studies.

SIR J. ALFRED EWING, D.Sc. (Edinburgh): If I venture to intervene so near the closing hour this is only because I happen to be one whose youth and middle life were spent in teaching and Research, who in his old age has been condemned to the adminis-

tration of teaching and Research, and who advocates strongly the combination of teaching with Research. We must recognize that in England—including Scotland—there is now a very substantial endowment of Research, in one form or another, whether by scholarships or by the grants which are made by the new Department of Scientific and Industrial Research. It seems to me that, while much of the recent development in this direction is valuable and sound, there is an unfortunate tendency towards a divorce between Research and teaching, and that such a divorce is much to be deprecated. It has a bad effect on the work of the Universities, immediately and directly; and it also injures them by its influence on the preparation of persons for occupying the higher posts. I am now, of course, speaking particularly of scientific professorships. What do we find in the laboratories of any University? We find, on one hand, young men who are devoting their whole time to Research, in the enjoyment of Research Fellowships or Scholarships for that purpose, but doing nothing to aid in the teaching of the University, men who, of course, are requiring much attention from the professor; and side by side with them we see others, young demonstrators and lecturers, possibly equally well qualified for Research, whose time and energies are entirely taken up in a ceaseless round of teaching. From which of these two groups are the professors of the future to be chosen? Are they to be men skilled in Research, who have never learned to teach? Or are they to be men who have proved their aptitude to teach, but have never had a chance of doing original work? Obviously neither is satisfactory. Surely a solution should be found by endeavouring to divert some of the money which is now available for the endowment of Research into channels which will allow part of a man's time to be spent in Research, and leave the other part of his time for teaching. I wish to commend this suggestion to the attention of the Department of Scientific Research. It is very natural for them to hesitate to give a grant under conditions which will allow the person who receives the grant to undertake teaching work as well. They will say: "This is only a sort of back door for endowment of the Universities. If the University gets such a man into it, it will turn him into a teacher." I submit that this objection is not final. The Universities would play the game if grants were made on the distinct understanding that, say, half the time of the person who receives them is to be devoted to Research, and only the other half to be occupied in teaching. As a matter of fact, in an organization with which I have to do, the Carnegie Trust for the Scottish Universities, we have adopted recently that very

method. We have gone to the Universities of Scotland and have said to them: "If you like to appoint a suitable person on the half-time basis, we will pay half his salary as a Research worker, and you will pay the other half for the teaching." The scheme works. It is only a beginning so far. I would like to see it extended on a very much greater scale by those who are responsible for administering the national resources for Endowment of Research.

There is a further point. Research is for the most part the work of young men. Newton was only twenty-three when he argued from the fall of the apple to the equilibrium of the solar system. It is in the early years and in early middle life that the best Research is done. Few, very few, men are able to continue effective original work in their old age, as Lord Rayleigh did. On every ground it is desirable that we should make it possible for the younger workers in the University to engage in Research—that they should do it while any original power they have is still fresh, and that by combining research with teaching, they should qualify themselves, in the best possible way, for the responsibilities of the higher posts, when they will have to teach, to organize teaching, and to direct the researches of younger workers.

THE CHAIRMAN: I gather that Research is mainly obstructed by want of money and want of leisure. As far as want of leisure is concerned, there is only one way in which leisure can be secured and that is by steadily refusing to do what people ask you to do, and I would recommend to the Heads of the Universities that they might have classes in the art of saying "No." I think it ought to be made a criminal offence to start a new committee. As to the question of money, you will get no money out of the State at present. You will not get it this year or next year, or for many years to come. There is only one source and that is our friend the millionaire, and I do hope that our millionaires will see that the honour of this country requires that the millionaires on this side of the Atlantic should not, in generosity, be behind the millionaires on the other side.

FRIDAY, JULY 8.—Afternoon Session.

CHAIRMAN:

THE RIGHT HON. LORD KENYON, K.C.V.O., PRO-CHANCELLOR OF THE UNIVERSITY OF WALES.

"Interchange of Teachers and Students."

I.

THE INSTITUTION OF A SABBATICAL YEAR FOR PROFESSORS.

II.

PROVISION OF TEMPORARY JUNIOR POSTS FOR GRADUATES OF COLONIAL AND FOREIGN UNIVERSITIES.

III.

HOW TO RAISE FUNDS TO MAKE A TRUST FOR THE PROMOTION OF THE MIGRATION OF STUDENTS.

IV.

EQUIVALENCE OF ENTRANCE EXAMINATIONS.

V.

MUTUAL RECOGNITION OF STUDY AND EXAMINATIONS.

Eighth Session.

The Chairman: We have many and rather various topics for discussion this afternoon, and so I do not propose myself to waste much of your time, being only an amateur, so to speak, in these subjects. Any remarks that I might make would hardly be as appropriate as will be the considered opinions of those who have reasoned these matters out and can deal with them more fully. I think our best course to pursue this afternoon would be that the authors of the four papers should read them first; that I should then invite Dr. MacLean and Dr. Capen, who are here, to give us their experience on these subjects from America, and that after that we should invite free and full discussion on any of the topics that have been laid before us.

I should like to say that I am a full believer in the proposal that will be laid before us to-day, that a full opportunity should be given for an interchange of study and outlook both among professors of our Universities and among the students. Probably the chief difficulty that stands in our way at the present moment is the trouble of finance, a trouble that overshadows all our efforts at extending University work; but that should not, at any rate, stand in our way when we attempt to organize some such departures as the ones we are going to discuss—*i.e.*, the Sabbatical Year for Professors and Lecturers and the Interchange of Students. I think that we might possibly, as an outcome of this meeting, settle upon some scheme of organization for the raising of funds and, generally, for the promotion of the objects that we have in view. I don't think there can be any two opinions that a certain term of leave for professors and lecturers is highly desirable. It must give them the opportunity of broadening their outlook, of obtaining fresh ideas and returning inspired by those ideas to the places whence they have come. If I may quote the Vice-Chancellor of my own University of Wales, Sir Harry Reichel; he told me that after visiting America with the Mosley Commission his ideas in many respects were completely changed, and he came back with a much wider and broader view on the whole question of University education.

With regard to migration of students, I think that there is rather more that is problematical, but there is no question that in this University of Oxford the advent of the Rhodes Scholars has had a very great and beneficial effect. Recently, since the war, we in Wales, and others also I believe elsewhere, have received a certain number of Serbian students, and I think that has had a good effect both on our students and on the Serbians,

and we may look, I think, in the future to those Serbians whom we have trained going back to their own country with ideas gained here which are likely to inspire a good spirit of friendship and cameraderie between the two countries. A short time ago at Cardiff we held the installation of the Prince of Wales as our Chancellor, and on that occasion one of the topics which he discussed with me, and afterwards I believe with Dr. MacLean, was this very interchange of students. He said that it must be for the advantage of both countries if we could arrange an interchange of students between America and Great Britain. Now, Dr. MacLean, as I say, is here, and therefore I don't propose to enlarge very much upon this as he will do it much better himself, but it is of interest to note that an exchange of students is going on at this moment between America and France. At the present moment, 123 French women and 14 French men have gone to America and a smaller number of American girls to France, but I believe it is expected that in course of time the number of American students in France will rise to 127.

The question, as I say, of finance, is, I think, one of the chief difficulties. It is obvious that we should have to provide some fund for the students and for the professors in addition to their salaries, and I think it is possible that the Universities Bureau might arrange for the allocation of any funds which may be collected; but I only throw it out as a suggestion that it would, perhaps, be wise in the first instance if the whole of the Universities of the Empire were to try to raise this fund rather than each University independently. It would give it a bigger claim on the generosity of the private individuals from whom we should hope to draw money. As I said before, I don't propose to occupy your time, but I do think that what we ought to aim at is that the Universities of the world should be united as one large League of Fellowship, organized and inspired in the same way that the system of Freemasonry is throughout the world, and they should cultivate to the fullest extent friendly intercourse for the general benefit of humanity.

INTERCHANGE OF TEACHERS AND STUDENTS.

First Paper.

Sabbatic Leave.

English University teachers have for many years looked with envy upon the systems of sabbatic leave in vogue in many of the more important American Universities. It is with regret that they find themselves unable to imitate their German or Scandinavian colleagues whom they may often find during the spring and summer months free to enjoy the advantage of such leave, and carrying on their studies or research in the British Museum and elsewhere. The educational value of such leave is now generally recognized, but up to the present, while such things as grace terms, one or more in number, are periodically granted in some of our large Public Schools, I know of no English or Scottish University which has any regular system of sabbatic leave. All that we have is that occasionally, and in entirely sporadic fashion, three or six months' leave of absence is given to a professor who has grown old in the service of his University and is perhaps in danger of a serious breakdown.

What is the secret of this backwardness of our Universities in promoting a reform so closely and vitally affecting their academic well-being? No doubt it is in part due to our innate conservatism, the reluctance to do what has never been done in the past. Further, there is the fear of exposing the College to criticism by suggesting such leave when the layman is so deeply impressed with the idea that the University year may at the very least be looked upon as six months' work and six months' play. The main obstacle, however, in the path of this reform is the undoubted fact that all Universities alike are insufficiently staffed for a full system of sabbatic leave to be possible.

Seldom or never is a department sufficiently equipped with either Professors or Lecturers to be able to do without the services of any one of their number for more than a very limited period of time. A full system of sabbatic leave at periods of seven or ten years would require permanent additions to the staff to the extent respectively of 15 or 10 per cent. above those at present employed. That is an expense which no University is likely to incur for the establishment of a sabbatic system, however valuable it may be, and in the present straitened conditions of University finance it

is entirely out of the question. It is clear also that the problem cannot be solved by temporary additions to the staff. The expense would not be so great, but it is unworkable in actual practice. Except in rare and fortunate cases spare men of the right type are not available when they are wanted. This is more the case than ever just at present, when the permanent posts tend to be more numerous than the really good men who can be found to fill them.

Is it possible, then, in these circumstances, to do anything at all? It would seem that it is possible if we are not too ambitious in our aims and are content to make a move in the right direction, though we cannot compass our ideas to their full extent. Before indicating what that move might be, may I say that my remarks are framed to apply to the modern English University alone. I am not sufficiently familiar with the working of the Scottish or Colonial University system to include it within my view, and I feel that both here and in the case of the older English Universities there are such differences of organization (especially in the matter of departments), length of term, etc., that any attempt to cover the whole ground would only obscure the general issue. With certain necessary adaptations which could best be suggested by members in active touch with the work of those Universities, I believe, however, that the scheme which follows might be applied to all British Universities alike.

In the modern English University we have two long winter terms and one short summer term, seldom extending to more than seven or eight weeks' lecturing, though there is really a further three or four weeks of examining and general winding up of the session before the vacation begins. That vacation tends to be cut into by numerous demands made by the Board of Education, the W.E.A., and other similar bodies for summer schools. It is further curtailed by the duty of examining for entrance scholarships, by September examinations for those students rejected in June, and by preparations for the October entry. Still, we can say in favour of the Long Vacation of the modern University, that at any rate it is not as badly carved up, from the point of view of continuous study, as the Oxford one is by examining for Schools, or the Cambridge one by Long Vacation residence.

Would it not be possible for the modern English University to establish a system of sabbatic leave, whereby professors and lecturers alike were periodically released from all College duties from the end of the Epiphany (or Lent) term until the beginning of the Michaelmas term? This would mean complete freedom from College duties for six months, during which, so far as the

actual work of the department was concerned, the main loss would be some seven or eight weeks of the teaching services of a professor or lecturer, with a possible further loss of his services for a certain share in the year's examination work. The first part of this loss could, to a large extent, be met by previous planning out of the year's work in such a way that the professor or lecturer who was going on leave did as much as possible of his year's lecturing work in the two winter terms. If this were done, the other members of the staff should have no difficulty in carrying on for the summer term, or in doing such work as was necessary in the Long Vacation. There is little doubt that they would do it willingly, knowing that this extra work would receive its ample reward in their own sabbatic leave at some later date.

If there is to be any hope of the establishment of such a system or of its successful working, certain general lines of policy must be laid down.

First and foremost, it must be made clear that this sabbatic leave is not merely a lengthened vacation. It seems to me quite impossible to put in any claim for more free time which may, entirely at the will of the teacher, be spent on holiday. If a University teacher needs a long holiday now he can take it, that is if his salary allows him, though admittedly such a holiday may be at the cost of sacrificing time which he might and ought to spend in research. What are needed, however, are opportunities for getting into touch with the work in Universities in other countries, seeing their laboratories, working in their libraries, studying their methods of research, opportunities for continuous and uninterrupted work either at home or abroad, which it is quite impossible to get under the present system, opportunities for intellectual refreshment which are denied to us if we move continually in the same groove of academic routine. Sabbatic leave is the only effective protection against academic staleness, and affords reasonable hope of intellectual refreshment such as University teachers at present sigh in vain for. The Long Vacation itself is not enough (in spite of its three months' length), for many of the activities just suggested can only be carried on to a limited extent, and some of them not at all, during those three months.

To ensure the best possible use of this system, and to prevent its abuse, it would seem to be a necessary corollary that any professor or lecturer due for leave should, before that leave is officially granted, present to the authorities who grant it a full statement of the way in which he proposes to make use of it.

Next, the leave must be granted to professors and lecturers alike—to professors because without it what they have accom-

plished in the past is likely to become a mere deadweight of learning; to lecturers even more, because it is just these opportunities which will give the good man his chance to carry through the kind of work which will bring distinction to his University and promotion to himself.

The frequency of the leave would have, in some measure, to be governed by the size of the staff of the College, but it would seem that no system could be really satisfactory in which the interval between successive leaves was greater than seven years. This would mean an average of some 15 per cent. of the staff absent on leave each year, if we make no allowance for wastage. The question of wastage depends very largely upon whether the system of sabbatic leave is confined to single Universities, or is made an inter-University one. If the latter is the case, the wastage would be reduced to a minimum, for there would be no sacrifice of leave when a lecturer or professor moved from one University to another—his years of service at the one would stand to his credit at the other. Such a system is in many ways desirable, but its establishment is not likely in the initial stages of the movement. Without it, we may reckon on considerable wastage, reducing the 15 per cent. to at least 12 per cent.

Here a further important point arises. The conditions of leave as so far laid down are not such as to make it probable that anything like this 12 per cent. could avail themselves of it. Some members of the staff will be unable or unwilling for various reasons to propose such schemes of work as would secure the granting of leave; still more would not be able to avail themselves of it for financial reasons. These financial reasons are two in number. First, many will be unable to afford that residence abroad which their scheme of work will very probably demand. Second, most professors and lecturers make certain additional sums by examination work and summer schools. The money from these is almost all earned during these very months of leave, and so, to take the leave will mean definite financial loss. To meet this difficulty, it may be suggested, that with every grant of leave, a grant in aid of £50 should be made, and that in cases where the College Council or other authority was of opinion that a specially good scheme had been presented to them involving larger expense, the grant might be increased to a maximum of £100.

The total wastage from one cause and another is difficult to calculate. Personally, I believe that it would mean a reduction of the 15 per cent. to at least 10 per cent. To give some idea of the cost of working, I may say that for a College with twenty professors, and the usual average of lecturers (other than pro-

bationers), say two to each department, the cost per annum would, under these conditions, lie between a minimum of £300 and a maximum of £600.

One does not like to suggest any additional forms of University expenditure nowadays, but it does seem to me that here we have to do with a matter which is most urgent from the academic point of view, if our staffs are to be lively members of the great world of scholarship and research, and not mere fossil stay-at-homes or academic drudges, and the whole scheme can be carried out in a College of average size at no greater cost than the establishment of a single professorship.

ALLEN MAWER.

THE INSTITUTION OF A SABBATICAL YEAR FOR PROFESSORS.

Second Paper.

I DO not propose to discuss either the origin of the idea of a Sabbatical Year for Professors or the extent to which this institution has already been adopted in the Universities of the Empire. I do not possess the knowledge which would qualify me for either of these enquiries. The fact that the institution is frequently referred to as the " Harvard Sabbatical Year " suggests an origin in connexion with that great University. However that may be, there can be little doubt that it is in the Universities of the U.S.A. that we find the system of definite and regular periodical relief from professorial duties most widely and most systematically recognized. And it is only a more or less regular and systematic scheme of relief which ought to be understood under the designation " Sabbatical Year."

My own qualification for sharing in the discussion of the problem is that during a lengthy period of service as a Professor in a University in one of the distant Dominions, I have witnessed within that University the full evolution of the Sabbatical Year from its imperfect stage of an occasional leave of absence granted in special cases as an act of grace on the part of the governing body, to the fully developed stage of a recognized right of leave of absence for one year in seven on full professorial salary.

I have thought that the mere statement of the actual practice, in this regard, of one of the largest Dominion Universities might be helpful to colleagues in other overseas Universities, and might even be of some interest to our colleagues in the Universities of the home country.

I may admit at the very outset that the case for a Sabbatical Year is far stronger in the Universities of the more distant Dominions like Australia and New Zealand than it is for Universities nearer the European centres of culture.

Canada, like the U.S.A., is after all within a few days of Europe. Even South Africa is near enough to allow of a Professor obtaining an effective period of residence here in Europe during that active period of the academic year within which falls the long summer vacation of the Southern Hemisphere.

Australia and New Zealand are too far away to allow of any effective personal intercourse with this side of the world, unless

actual and substantial leave of absence from professorial duty is secured.

And it is, no doubt, precisely on this account that we on the other side of the globe have been able to satisfy somewhat reluctant governing bodies that there is no other way of keeping our Professors in vital touch with their fellows elsewhere—in Great Britain, in America, and on the Continent of Europe—than by offering them facilities for travelling abroad at not too great intervals of time.

Reasonable as this may seem—eminently intelligible to those familiar with academic conditions and ideals—it is not always easy to carry conviction to the lay mind, which in some Universities is a dominant factor even in the governing body. The shrewd and able business or even professional man—himself perhaps cumbered with the affairs of his strenuous occupation, and often yearning for rest and relief—is at first unable to see why University Professors should be singled out for favoured treatment. Why should they be released periodically for rest and refreshment whilst the equally hard-driven business and professional man must go on, or at least make his own provision for relief? And the answer undoubtedly is that there is no reason for such differential treatment, if we have regard merely to the personal interest of the individual concerned.

The reason is only to be sought and found in public University policy. In many subjects, if not in all, a Professor's effective value for the University and the community depends wholly upon his keeping up to the high-water mark of his subject, and this is—at least in many cases—impossible without maintenance of personal touch with the work of specialist colleagues in the laboratories and libraries of Universities elsewhere. Yet he can go on doing his work in more or less routine fashion without it, and this he will inevitably have to do if special provision is not made to ensure his occasional detachment without serious pecuniary embarrassment. Because it must be remembered that a Professor—unless he has private means—cannot, especially in these days, undertake any extensive programme of travel at his own charges. If he be married, and with a family, he must either take his family with him at great cost, or continue to support an establishment at home and bear in addition the heavy charges of foreign travel. It is out of the question to expect the Professor himself to shoulder this burden. Either he must forgo the opportunities for intellectual stimulus and development which the intercourse secured by travel afford, or an adequate subsidy must be forthcoming from public sources. There cannot be the slightest

doubt that it is really in the long run a "paying proposition," if not in any obvious financial sense. The University that so treats its professorial staff will, and does, reap a rich reward in vital and progressive teaching, and in enhanced capacity to influence in like vital fashion the young and plastic mind of the student. Even in mere technical improvement, learnt and suggested elsewhere, the reward most surely comes.

And although it is doubtless true that what I am insisting on is more emphatically true in respect of the Professors of the more distant Dominions, it is also very largely true in principle and in fact for all Universities whatsoever. Professors should not be merely given leave to go—they ought rather to be periodically hunted out of their chairs, for the health of their own souls, and hence of those committed to their care.

I know well that there be many who would gladly subscribe to all this in principle, but who yet cannot see how it is to be translated into practice. The will to realize this ideal is not lacking, but the material resources are regarded as inadequate. One has great sympathy with this point of view. There is so much that is crying out to be done in every academic institution, and the means are nearly always so hopelessly inadequate to the programme.

Yet, after all, it is a question of the order of urgency, and I do not hesitate to suggest that the object now under consideration is actually of greater importance for the well-being and effectiveness of a University than is the carrying out, in all desirable detail, of particular schemes for merely extending the activities of the institution in this or that new field.

I personally can most usefully speak of the policy and practice of that University with which I am most familiar. I am proud to claim for the University of Sydney the merit of having fully recognized this truth. At no time in its history have the demands upon it to enlarge the scope of its educational enterprise in very diverse directions been more insistent. Yet the governing authority has resolutely reserved the means to make provision for carrying out in full the policy of the Sabbatical Year for its Professors. The policy of providing for periodical leave of absence is shared by most if not all of the Australian Universities, but I think that Sydney alone has, as yet, gone to the full extent that I have already indicated, of granting one year in seven on full pay, not merely as a boon, but as a recognized professorial privilege. The right is, indeed, limited by some practical considerations. The Professor is required to submit a reasonable scheme for carrying on the work of the chair during his temporary absence. And some regard has to be paid to the total numbers of the Professors

who desire to obtain leave of absence in any given year. Thus far, the privilege is only enjoyed as a right by full Professors. Leave may be granted in other special cases on application, though the conditions would usually be somewhat different. When the system was adopted, an estimated sum was specially ear-marked in order to finance the scheme.

In drawing up the estimate it was not judged necessary to provide for a *locum tenens* for the year at the same rate of pay as that of the absent Professor. In a few rare cases it may be necessary to offer salary at the same rate. Even then, the rate of pay need only be maintained for the actual academic terms—say nine months. But in most cases the financial requirement is even less exacting than this, especially in the more highly organized Universities. In these the Professor is ordinarily not the sole teacher in a Department. Quite commonly he is the head of a department with a staff of Lecturers or Demonstrators, or both. The temporary provision made in such a case will very often take such a general form as this :—The Assistant Professor, or Senior Lecturer or Demonstrator, will act as the Professor's *locum tenens*, and will receive for this a substantial honorarium in addition to his normal salary. Smaller honoraria may be paid to more junior members of the staff, according to the increase in the extent or relative importance of their duties. A temporary additional junior Lecturer or Demonstrator may also be appointed for the year. Suppose, for example, that the normal staff of a department was constituted as follows :—

(1) Professor at a salary of £1,100.
(2) Assistant Professor, Senior Lecturer or Senior Demonstrator at £600.
(3) Second Lecturer or Demonstrator at £350.
(4) Junior Lecturer or Demonstrator at £200.

This staff might very well be supplemented during the Professor's temporary absence as follows :—

(1) Assistant Professor, Senior Lecturer or Demonstrator as Acting-Professor at salary of £750.
(2) Second Lecturer or Demonstrator, £450.
(3) Junior Lecturer or Demonstrator, £250.
(4) Temporary Junior Demonstrator, £200.

The requirements would thus be met in such a case by the expenditure of a sum of £500 in addition to the ordinary establishment. In some cases £400 might suffice, in others £600 would be required, and in rare cases even more might be necessary.

With smaller staffs, consisting, say, only of a Professor and one Lecturer or Demonstrator at £450, an additional £400 or £500 would usually enable the necessary arrangements to be made. Obviously the adequacy of some such provision postulates real capability on the part of the subaltern staff of a department. But a University must be in an unhealthy condition if this cannot be assumed. In point of fact, the senior sub-professorial teacher in any large and well-organized department is usually one who is himself an aspirant to professorial rank, to whom a probationary period as Acting Professor will prove invaluable. But it is probably too much to expect that any such scheme can be carried into effect without some sacrifice. Our claim must be, and is, that it leads to such a gain in efficiency in the institution, upon the whole, that this far outweighs the disadvantages of any temporary handicap of the Department concerned.

The question may naturally be put, "Why should the privilege be reserved for full Professors? Is not the claim for a similar privilege on behalf of the subaltern staff as strong or even stronger, since the younger men are, on the whole, in the more plastic stage of development?" The weight of this last consideration may be conceded. But we must revert to the admission made at the outset, that the justification for the provision being made at all is the general interest of the University in the quality of the teaching in its various departments, and this is normally and ultimately controlled by the Professors in charge. To offer exactly similar privileges, under the same conditions, to all members of the University staffs is simply impracticable, however desirable it might be in theory. Further, it is probably a sound University policy that refuses to consider subordinate teaching positions as other than temporary appointments. And the Sabbatical Year need not be regarded as appropriate to these. It should rather be regarded as the indispensable opportunity afforded to those who more permanently control the teaching and research in a University Department of keeping their standard of efficiency and of interest in all sides of their subject up to high-water mark. It is in order to secure this quite inestimable value in professorial activity that we regard it as an important aim in University policy to establish an effective system of leave of absence such as that represented by the so-called Sabbatical Year.

It is true that something in the same direction may occasionally be secured by an exchange of Professors.

But no system of exchange can be regarded as an adequate substitute for the Sabbatical Year. For (1) the system of Exchange of Professors must always be a very restricted one, difficult

to arrange and not easy to carry out in detail. (2) It does not really liberate either teacher for free activity in chosen directions. It may, and often will, actually impose a greater—because less familiar—burden on the teacher.

(3) It must tend to involve an increase in the work of the normal junior staffs of the departments concerned without any correlative advantage in status or in opportunity for the exercise of independent judgment and initiative or in increased emolument.

(4) It is hardly applicable to the Universities of the distant Dominions or to institutions where the coincidence of the corresponding academic periods is evidently defective.

J. T. WILSON.

THE INSTITUTION OF A SABBATICAL YEAR FOR PROFESSORS.

Third Paper.

In certain overseas Universities the practice holds of granting periodically a year's leave of absence to the heads of departments. The conditions vary for different Universities. The period is not always seven years, nor does the leave always amount to one year; but the principle and the determining causes of the institution are the same. I have no personal acquaintance with this institution, called the Sabbatical Year, nor do I propose to give an exhaustive account of its history. My object is, rather, to enter a plea for its adoption by the Universities of these islands and to meet some of the objections which will suggest themselves on a first consideration of the scheme.

In these days of high pressure we need at times more leisure and fuller opportunities for self-improvement than are afforded by the ordinary vacations, especially as official work tends more and more to encroach upon the period of those vacations as defined by the University calendar. There are, no doubt, individuals who can deliver, year in, year out, an endless tale of lectures with the inflexible fidelity of a gramophone. The petty cares, the innumerable details of college and University routine, are to them only a delight. One is inclined to think that, if they had their will, the circle of academic duty would not be broken even by the present vacations. There was once a Fellow of Trinity College, Dublin, whose assiduity it would be hard to surpass. His devotion to duty was such that only once in his long life as Fellow did he pass out of sight of the College walls. On that occasion he journeyed to a village two miles from Dublin. But even this experiment in travelling demonstrates the educational value of the practice; for on Commons that night Dr. Barrett was eloquent about his experiences, especially with regard to a flock of sheep, an animal which for forty years he had seen only as mutton.

Men of this type are rare. Most of us are of weaker substance, and cherish still some special ambitions. We are not content always to teach what we learnt years ago. We desire at times to review our store, to improve and, if possible, to add to it. The visions of research in which we indulged in our youth have not faded altogether, and it is sometimes irksome to turn our backs

on fields where we feel that we might do good work. The spirit of adventure which called us to make our first voyages in the seas of knowledge is at times insistent, and we find it hard at times to shut our ears and manœuvre our ship round and round in our land-locked harbour.

And our teaching suffers. It loses that fire which is of more value to the student than sheaves of notes. We are conscious that we have sunk into a groove from which no amount of self-whipping can lift us or stir our jog-trot into a gallop. Mechanically and monotonously we retail our old lectures, resigned to their imperfections, which we have no opportunity often of correcting.

The Sabbatical Year was designed to remove this blot upon our University organization. The interests of the University demand that the teacher be as efficient as possible both in method and in knowledge. The interests of Science and Scholarship demand that mature scientists and scholars should not be handicapped in their attempts to add to knowledge. And there is no need to remind this audience of the importance of establishing personal relations between the different Universities and of linking up the whole University world. It is by travel that such an ideal can be best realized, and in many cases travel is possible only on condition of a Sabbatical Year. The interchange of ideas merely by correspondence and books cannot, as a substitute for personal connexions, be regarded as entirely satisfactory.

It is not necessary to multiply arguments in favour of the Sabbatical Year. Its advantages are self-evident. I shall turn to the difficulties in the way of its introduction. There are at least two of a serious character.

The first is the question of finance. It cannot be denied that the Sabbatical Year, if instituted on generous lines, will impose a fresh burden on the revenues—already in many cases inadequate—of the ordinary University. At first sight an increase in expenditure of one-seventh seems indicated. In actual practice, however, it has been found possible to provide a Sabbatical Year, on liberal terms, at a cost which is roughly equivalent to an increase of 7 or 8 per cent. in the sum allocated that year to the particular department. It should be possible to provide for this increase either by a redistribution of revenues, or by increased fees, or by increased local or Government grants. If the centres of higher education are the fortresses of an ideal State, a trifling increase in the expenditure on this form of armament should commend itself to the conscience of the nation.

The second difficulty which presents itself is of a more academic nature. It will be urged that the standard of efficiency in a

particular department will be lowered during the absence of the head of that department. There may be sometimes a difference of opinion on this point, and it is sometimes a delicate matter to decide. On the whole, it seems best to assume a certain diminution in efficiency ; the Professors, at any rate, should not be expected to relinquish their convictions on this question. Against the temporary decline, however, may be set the benefit which the department will derive from the rejuvenation of its head. And the benefit to the University at large will often be very considerable, for a Professor who has travelled during his year of leave will bring back with him the atmosphere of a wider world. In this way, too, useful knowledge and hints regarding University economy and administration may be gathered. Universities have much to learn in the latter respect from one another. Problems which are presenting themselves to us to-day for the first time have been faced and solved successfully by sister institutions. Even the oldest and wisest may study with profit the experiences of more modern Universities, and the latter have reason at times to recognize that infallibility is not a prerogative of youth. And there is another incidental gain to the University from the Sabbatical Year. The increase of responsibility and of administrative duty which an assistant will experience during the absence of his Professor will add materially to his value as a member of the staff. A department will in this way be insured against the temporary paralysis which sometimes occurs when the direction of the head is suddenly removed by illness or death.

I have, as I stated above, no personal experience of the operation of the Sabbatical Year. There is, indeed, in the case of one of the History chairs in my College, an arrangement whereby the Professor can absent himself for a period of two terms every five years. But this is exceptional in a University in these islands. For a true Sabbatical Year we have to look to the Universities of America and Australia. In the former country, as far as my information goes, the conditions under which a Professor can enjoy a year of leave are open to some criticism. The obligation to provide a substitute devolves upon the Professor. This is right, and in the interests of the University and the particular department ; but it does not seem generous to lay the burden of the substitute's salary on the Professor's shoulders. This requires a disbursement amounting to one-third, or even a half, of the professorial salary. Moreover, in actual practice, owing to the difficulties in providing a *locum tenens* and in making other arrangements, the Sabbatical Year comes, as a rule, only after eight or nine years' service. I heard of an exceptional case, where

the Sabbatical Year must have been confused with the year of Jubilee. If the Professor is content with half a year's leave, it is possible, by arrangement with the assistants and the Professors of the same faculty, to provide this on full salary; but the rule is that no extra charge can be laid on the funds of the University. At Wisconsin, and possibly elsewhere, there is a plan whereby a Professor, by giving his services gratuitously at two or four Summer Sessions, can earn leave for half a year, or even for a full year, on full pay.

It is in Australia that the Sabbatical Year seems to be established on the most liberal lines. When it was first introduced the cost fell, as in America, on the Professor; but to-day, in some, if not in all the Universities, the cost is defrayed by the University. All Universities grant periodical leave of absence, though some have not yet a fixed and definite scheme, and the period is, therefore, irregular. Sydney and Melbourne are, perhaps, the best organized. I have not been able to procure complete details for the latter, so I select Sydney as illustrative of the Sabbatical Year in Australia. In that University the scheme applies to all chairs, and in the allotment of the University revenues allowance is made for permitting each Professor a year's leave of absence. The leave is, of course, contingent on its being shown that the work of the department can be done during the absence of the Professor, but with this proviso: the Professor can claim as a right his periodic leave. The Acting Professor does not, except in very rare instances, receive the full pay of the Professor. Normally the Professor is the head of a faculty or department, with a staff of assistants and demonstrators. A particular department, for example, may require an annual expenditure of £2,250 on salaries, the Professor receiving £1,100, his chief assistant £600, and two junior assistants £350 and £200 respectively. In a Sabbatical Year the extra expenditure will amount to about £500, that is, £1,100 to the Professor on leave, £750 to the Chief Assistant (now Acting Professor), £450 and £250 to the two Juniors, and £200 to a Temporary Junior, or £2,750 in all. It may be assumed that at Sydney the Sabbatical Year demands, on an average, a special disbursement equal to about half the Professor's salary. In some cases it may be more, and in some cases less. Of course, the scheme depends for its successful operation on the existence of an efficient and well-organized junior staff. My informant admitted that the work of a department suffered during the absence of the head, but he held that it is always possible to provide against a serious sacrifice of efficiency; and his considered opinion, based on experience, was that the

general result of the Sabbatical Year was a signal benefit to the University as a whole.

I trust that subsequent speakers will be able to supplement these remarks. It would be interesting to learn whether there is a scheme in operation anywhere to provide the junior members of the staff with the equivalent to a Sabbatical Year, and it might be worth while to examine whether the scheme could be adapted to Universities organized on the older Fellowship plan.

E. H. ALTON.

ON THE PROVISION OF JUNIOR POSTS FOR GRADUATES OF COLONIAL AND FOREIGN UNIVERSITIES.

Paper.

§ 1. I HAVE been asked to contribute a paper on this subject to this afternoon's discussion. The suggestion that such posts should be provided does not come from me. My own view is that those who come to England from our Universities for advanced study and research, whether as young graduates on their first appointment to our teaching staff, or later, should be free to devote their whole time to their own work. The arrangements of the Universities in which this work would be carried out would probably make such assistance as a young graduate could offer a gift of little value. And if this residence were to come later in his career, it would probably not be for more than a year, a period the whole of which could best be spent in following the courses of the leading authorities on his subject or pursuing his own investigations and research.

I take it that the topic for discussion is really whether it would not be well for the Universities of Australia, Canada, India, New Zealand and South Africa to send more of their graduates, either already on their teaching staff as Instructors or Lecturers, or about to be appointed to such positions, to England for further study, and to gain some knowledge of other Universities and teachers than their own.

It seems more satisfactory to confine my remarks to the Australian Universities. What I have to say may be applicable to some of the other Universities represented at this meeting. But their delegates will have an opportunity of putting their views forward at the close of my statement.

§ 2. I am concerned chiefly with the graduate in Arts and Science. The professional schools in Australia have secured the largest share in the development of our Universities. The work of these institutions is estimated too much in terms of the number of their graduates with certain professional qualifications. And the young doctor, lawyer and engineer is already pretty well provided for, at least with respect to his professional training.

Among the graduates with honours in Arts and Science, there are always some who desire to carry their studies further and who should be encouraged to do so. Our Universities have a number

of graduate scholarships, and in the past we have sent many of our best men abroad for post-graduate work, chiefly to Oxford and Cambridge. Some of them are now to be found on the staffs of the Australasian Universities. The time is coming when the Australian Universities will, I believe, be mainly staffed by Australians. I understand that the Canadian Universities now provide most of their own teachers. Canada is fortunate in having the graduate schools of Toronto and McGill; the great American Universities are near at hand, and England and Europe are not far off. To be properly equipped for the work of a University teacher, in some subjects Australians must have—and in almost all subjects they ought to have—given several years to post-graduate study and research in other countries.

This does not imply that none of the Australian Universities should have graduate schools of their own. Sydney and Melbourne ought before this to have been able to organize post-graduate instruction on a proper scale in at least some subjects.

§ 3. The position I take up is as follows :—

(i.) The Universities of the Dominions should grant a much larger number of graduate scholarships in Arts and Science.

(ii.) In exceptional cases, a young graduate might be appointed to a position on the teaching staff—as Instructor or Lecturer—but given immediate leave of absence for a couple of years for advanced study and research.

There are men on the staff of my own University of Sydney who began their work as teachers therein immediately after taking their first degree. At that stage they would have been much better employed in carrying their own studies further under leading authorities in their subject. They have never had an opportunity of working elsewhere.

(iii.) The young Australian graduate who hopes to become a teacher in a University should pass through a systematic post-graduate course, the whole, or at least a great part, of which should be taken outside Australia, wherever the best instruction and inspiration in his subject can be found.

The British Universities have instituted the degree of Ph.D. to meet the needs of such students. In some of the newer Universities, and in some, if not all, of the Scottish Universities, there is no proper provision for graduate study. It might be well to allow Oxford, Cambridge, and, to a certain extent, London to be the main centres for such work. In their final honours schools and in their courses for the Ph.D. degree, Oxford and Cambridge offer splendid opportunities for advanced study and research. And in some subjects the same may be said of London. But so

far as I can see, no English University has yet an organization for graduate work comparable to that which Germany used to offer in her great Universities, such as Göttingen and Berlin.

(iv.) On completing the course of study referred to above in (iii.), my young graduate will probably have reached the age of twenty-three or twenty-four, and have gained a doctor's degree. He may obtain a temporary or permanent position in this country; but in most cases on the completion of his course he will return to Australia and be absorbed in the staff of one of our Universities. The growth of these institutions in the next few years will probably be rapid, and the demand for teachers of the proper kind ought to be keen.

(v.) There must be many cases where after seven years' service or thereabouts, the Lecturer or Assistant-Professor would be able to obtain leave of absence from Australia for a year. I am convinced that such leave ought to be granted frequently. In a few cases it might be possible to offer such a man some teaching work in the University where he proposes to spend his leave, and perhaps the Committee who drafted the agenda for this afternoon's discussion had cases like this in their mind. But surely it would be better for his own University to grant its officer leave on such liberal terms that his whole time while away might be available or his special work.

§ 4. So far I have spoken of the matter from the point of view of a teacher in an Australian University, and of what I think we might do on our side. In concluding my paper, I would offer one or two suggestions as to what might be done in England :—

(i.) Some of the Cambridge Colleges offer exhibitions or studentships to research students. For example, Emmanuel College announces a Studentship for Research of the annual value of £150, tenable for two years, and renewable, but only in exceptional circumstances, for a third year. This will be awarded in October, 1921, to a Research Student commencing residence.

A number of such studentships would be of much greater benefit than the provision of such temporary teaching posts as the agenda paper refers to.

(ii.) The Final Honours Schools in Oxford and Part II. of the Tripos in Cambridge may sometimes be the most suitable advanced course of study for our young graduates. The privileges of affiliation are hedged round by regulations as to the exact nature of the entrance examination the candidate may have taken when he started his course, and the subjects he may have studied therein. Surely the possession of a degree in Arts or Science (or if need be a degree with Honours) should be sufficient to allow the

holder the privileges of an affiliated student.* And if I may speak for my own students, the best work that our graduates with Honours in Mathematics could undertake would often be a two-years' course of study for Part II. of the Mathematical Tripos. It is not generally known that an affiliated student at Cambridge may now omit Part I. of his Tripos and proceed to his degree on Part II. only, provided that the Special Board with which he is concerned recommends that this concession be granted to him on the strength of his previous course of study.

(iii.) Oxford, Cambridge and London might perhaps make better use of their resources for graduate work. Is there, except in isolated subjects like certain Science subjects at Cambridge, and Economics in London, a really good school for research in these places ?

(iv.) When a teacher in a University in India or one of the Dominions obtains leave of absence for a year to work at Oxford or Cambridge, I feel sure that those with whom he proposes to work would be able to arrange for his admission to one of the Colleges and secure for him therein a suitable status. In my own case, I have to acknowledge the privileges granted me as a former Fellow of Emmanuel during the year's leave which I am now enjoying.

H. S. CARSLAW.

THE CHAIRMAN : We have with us Dr. MacLean, Director of the British Division of the American University Union in Europe, upon whom my own University of Wales recently conferred an Honorary Degree, and Dr. Capen, Director of the American Council on Education. Before throwing the meeting open for discussion, I propose to ask them to give us the privilege of listening to their views on the subject of " Interchange."

* This remark requires correction. Oxford admits to the status of Senior Student any person who has obtained a degree at a Colonial University after a three-year course, such degree and University having been approved by the Hebdomadal Council.—H. S. C.

DR. GEORGE E. MACLEAN (Director of British Division of American University Union in Europe): An American asked by this Congress to say a word has a full heart. He has come home. And when I have the privilege of sitting under the presidency of my lord, the Pro-Chancellor of the University of Wales, and stand here as the latest baby member of that University, I am doubly at home. Welshmen seem to be leading, whether you think of Great Britain, or think, for example, of the Secretary of State of the United States, Mr. Hughes. I have also to request my genial colleague, Dr. Hill, who has proved himself an expert bell-ringer, when it has been said that bell-ringing was declining in England, to do his duty by me. I do not promise to stop, sir, till you ring.

Standing within the gates of Oxford, Rhodes' University, with such subjects discussed as have been discussed here, I feel that his prophetic dream is coming near to fulfilment, and that the English-speaking peoples of the Seven Seas shall shortly see that their leaders, for the most part University men, shall understand one another, and shall have exchanges not only of professors, but interchanges of students. I was asked to speak of the experiment of a little over two years of the Peace Administration of the American University Union in co-operation with the Universities Bureau of the British Empire at 50, Russell Square, London. I wish you would name the place not simply a Universities Bureau House, but a Universities International House, ultimately, we hope the clearing house for the Universities of the world. Whatever may be the future of my dear country across the seas, this old country stands as an island connected by the sea with all the world. And here, even if we Americans, should tower in population beyond you, will ever be the Athens of the English-speaking people. You, therefore, are at a point of great responsibility and of magnificent opportunity. That Universities International House in London is a most significant fact, I think, in the University world, and one of the most valuable symbols of after-war developments. It stands, this clearing house, not simply a bureau of information, not simply a place for advice, not simply, if you please, an educational embassy and consulate for all peoples, but it stands, it seems to me, as a place full of suggestiveness, where there should be as it were the forgings of the educational lightnings of Jove. But I know we are individualistic folk on both sides of the Atlantic, our institutions are intensely individualistic, and we very much fear that we should have some central agency which in some way will dictate to us. It is not possible, considering the traditions of our race, that such an agency should grow up. We only desire to be representative.

I have just read for the first time the Report of the Bureau, of its fine activities, but what impresses me above all in reading the Report is the constant recurrence of the thought that the Bureau has since its organization been urging ever further development. No less an authority, I see, than the late Vice-Chancellor of the University of Liverpool says: "Since the first establishment of the Bureau the whole sentiment of Universities towards it has changed. They now recognize the necessity for an organization capable of promoting co-operation and speaking for the Universities of the world." And repeatedly in this Report I see in some form or other that tendency comes out.

Now, here for a heart-to-heart talk, as English-speaking folk may talk to one another, even with different opinions. You will pardon me if I dwell for a moment upon the American University Union, for which I have some right to speak. That word Union is especially significant. With the outbreak of the war, when the United States came in—all too late, God forgive us—when we came in, immediately there sprang up spontaneously in every great University centre and even among the College fraternities, the desire to do something for the American College man whose career might be interrupted, to follow him into the fields where the Expeditionary Forces went. And immediately these many organizations were in danger of crossing lines, of confusion, of lack of economy and of efficiency. With patriotism aflame and intense zeal, think of the effort that was necessary in order to get these different agencies to coalesce. It was with triumph that at last a union was formed of these various agencies in the different rivalling Universities which was launched as the "American University Union in Europe." Then you know how quickly there sprang up what was called an American University in France among the student soldiers. After the Armistice, the debt of America to these British Universities was re-doubled, because you received 2,000 American soldiers on "detached service" for three months to study in the Universities in these Islands. It was my great privilege, as one of the Directors of that work, to distribute them from Aberdeen to Cork and from Cambridge to Galway. Those 2,000 men went home thoroughly pro-British, and they have been a fine band over there in these troublous times. Now, if that could be done in three months, think what could be done with a good influx of American students and professors now and here. The American University Union, reorganized after the war, was opened to women, and then had to be co-ordinated with other great enterprises like that of the American Council of Education, of which my valued colleague, Dr. Capen, will speak; the Institute

of International Education, tapping the millions of Carnegie; the Association of American Colleges, and American Association of University Professors. The associations of various kinds and people, put their heads together and the American University Union again became the corner of a co-ordination so that my little upper chamber in 50, Russell Square, represents another grouping and co-ordination.

Co-ordination is still the work. There are between twenty and thirty great agencies in the United States at this moment engaged in the work of interchange of students or interchange of professors. Eight of these agencies are foundations, seven of which are American, the other is the great Rhodes foundation. These agencies are still springing up. Only last year a beautiful daughter was born—the International Federation of University Women—with whom we maintain friendly relations and to whom we declare we will not have such emphasis laid upon sex as will bring division into the kingdom of education. These things, then, emphasize co-ordination. All these forces are to be encouraged having various fields and varieties of work, but when it comes to the one thing—exchange of professors and interchange of students—I appeal to this Congress and to the leaders of all these Associations to use the machinery, already in operation for several years, that has been set up and blessed by the Universities and recognized by the Governments of Britain, France and the U.S.A. This great machinery is here.

I appeal, and you will forgive me if my zeal outruns my discretion, I appeal to this Congress, in light of what is indicated by the bare facts that I have mentioned, to see, as you have power this day still further to develop your Universities Bureau, that it is made not a formal office like that of a Governmental Bureau; to see that it has the widest opportunities opened up, that its headquarters in Russell Square be a place such as, in a little way, we have made our corner for American students, where students will gladly come and find a welcome. I don't want a club, but I do want such vigorous administration of your Bureau that we sometimes too swift-footed but stumbling Americans may have a pace set us and an example which will stimulate us in this wonderful movement so important to the world. My lord in opening the meeting referred to the blessing of the Prince of Wales upon this subject. I believe that when the King said: "Britain and America, companions in arms, will be brothers in peace," he also thought implicitly of this leadership which Universities can give by interchange of scholars. President Harding has used words, too, that give me some courage, and which I

think should give you some courage to fulfil to the utmost degree the possibilities of your Bureau. Said President Harding: "The labour of uniting into still closer unity and understanding the English-speaking peoples is of significance of good to all Americans and to all nations and races of the world." Here is the anchor to the windward for the storm-tossed League of Nations. Finally, seeing before me Professor Petersen, the administrator of the University of Copenhagen, I see that it is not only English-speaking peoples, but all the peoples who must come to this island for a centre and who are interested in your work to-day.

At the request of the Secretary to the Bureau, Dr. MacLean submitted for inclusion in the Report the following additional matter which time did not allow him to include in his speech :—

With the rise of Mediæval Universities troops of scholars went from University to University and the Masters' Degree brought *jus ubicunque docendi*. In the nineteenth century the German Universities put forth special efforts to maintain the practice despite language difficulties, and, perhaps for the first time, attempts were made to *organize* exchanges.

Not the least among the after-war significant movements to meet the needs of the new era of internationalism upon which the world is entering is the establishment of agencies to encourage exchanges. The very word "international" has become one to conjure with. Its magic moves many amiable people to start some new international organization. Partial statistics at hand show at present more than twenty agencies engaged in the interchange of students, not counting the Universities and Colleges which offer travelling fellowships to their qualified graduates or institutions having specific scholarships for foreigners. Eight of these agencies (all American except that of Rhodes) are endowed Foundations; two are bodies directly representative of Universities and Colleges and voluntarily supported by them; one is representative of the Universities and State-aided; one is sustained and controlled by a Government; four are voluntary associations or Committees; one is a private enterprise; and three are voluntary student agencies. More than three hundred American students are placed annually through these agencies in European countries, chiefly in Great Britain and France, and a somewhat less number of Europeans in the U.S.A. Fourteen of the agencies serve men and women, three men primarily, one men only, and three women only. These encouraging figures indicate the rising tide of this international student migration. The variety of agencies engaged is suggestive; in the Foundations, of generous

donors and financial stability; in the bodies directly representative of the Universities and Colleges, of the reconstruction of the Republic of Letters; in the Government and State-aided agencies, of the awakening of Statesmen to the importance of international Education; and in the voluntary associations, of the widespread interest in the subject.

Since youth is the first to see the dawn of a new era, most significant is the spontaneous activity of the student organizations. It is also a sign of the times that in the great majority of the agencies there is no distinction of sex. The great number of the agencies teaches the breadth of the work and the need of co-ordination if there is to be economy and efficiency of administration and an avoidance of confusion.

The Universities' Bureau House in London is an outward and visible sign of this grace of co-ordination. The Universities Bureau of the fifty-nine Universities of the Empire is in itself the first established continuous means of the grace of co-operation of these intensely individualistic institutions.

In this same house, engaged in the international correlation of Universities, are already gathered the Office National des Universités et Ecoles Françaises, the Anglo-Danish Students' Bureau, and the British Division of the American University Union in Europe.

Each of these three bodies represents a co-ordination of various forces in their respective nations. The American University Union, on whose behalf you have invited me to speak, is an example of co-ordination of diverse agencies for international purposes. Indeed, the use of the word "union" sprang from the coalescence of bureaux spontaneously generated in a number of American institutions and College fraternities to minister to College men in the American Expeditionary Force. In the reorganization of the Union after the Armistice for peace purposes it was not only made directly representative of leading women's, as well as men's, institutions, but also of the Association of American Colleges and the American Association of University Professors. A basis of co-operation was further agreed upon with the American Council on Education and the Institute of International Education, and the recognition was gained of the United States Department of State and Bureau of Education.

A friendly relation was established with the International Committee of the American Association of University Women and the International Federation of University Women. Further co-ordination is still desirable.

We are only in the second year of so vast an enterprise, but the

need of it has been demonstrated and the first fruits are encouraging. The experiment has given some results and raised certain problems. If it will not be thought unfair for this Congress, in the midst of its primary interest in questions within the Empire and with many world-wide relations, may one presume to ask the Congress to consider the following points just from the Anglo-American angle ?

Exchange of Teachers.

(1) Where institutions see fit to continue to arrange exchanges direct with other institutions, they should report these arrangements to the office of their own country—not merely for statistical purposes, but also that the offices concerned may put their facilities at the service of the exchanging professors.

(2) There are at least three distinct kinds of exchanges :—

(*a*) Of professors of world-wide distinction the purposes of whose visits will be for conference and inspiration, and for whom lecture circuits may be arranged.

(*b*) Of professors of less distinction who may give a course of lectures for a term or a Summer Meeting.

(*c*) Of junior members of the staff of instruction, men of promise, who might be in residence for a year at a given institution. They visit other Colleges with the purpose of returning to their home institutions with a widened acquaintance among scholars in their subject and first-hand knowledge of different methods of instruction.

The last group may easily prove the most valuable for the purpose of knitting institutions and countries together.

An exchange of teachers in the broadest sense of the phrase is the finding of foreign posts for teachers whether in Schools or Universities.

The applicants of this class, especially British, desiring to go to the United States are relatively numerous. As University graduates they have some claim upon the Universities' Bureau and on the American Union, but, as these bodies have not been commissioned and equipped for this work, these teachers generally have been referred to the best Teachers' Agencies in the countries concerned. It remains to link up the Bureau and the Union with the Appointment Boards of the Universities.

With reference to the interchange of students there is practically universal agreement that only post-graduate students should be encouraged to migrate—persons whose characters are formed—

whose loyalty to their country is established, and who know what studies they wish to pursue.

There are two groups of post-graduates—those who wish to research and proceed to advanced degrees and those who wish to taste the intellectual and social life of another country—rounding out their education in something somewhat better than the "grand tour" of an earlier time. Wisely, Sir Geoffrey Butler advocates making room for this group even if only one year's residence is desired.

Occasionally opportunity must be afforded for the acceptance of undergraduates. Sometimes families are moving from one country to another, or take up temporary residence in another land. The College career of their children ought not to be interrupted. Sometimes an undergraduate should be accommodated who wishes to pursue a year or two of study abroad to be credited towards his degree at home. In the English-speaking world, student interest in athletics, games and various activities in societies devoted to debate, literature, dramatics and music, demands some means for international meets and contests. To these we should lend a helping hand.

With the universal adoption of co-education, with one or two notable exceptions, the increasing interchange of women students has furnished about one-third of the cases handled by the University Union. In view of the excellent provision in the States for the higher education of women there is no fear of a flood of these immigrants.

Nevertheless, the women's societies in the old Universities and the hostels in the others, should be enabled to accommodate a larger number than in the past.

There are no special problems beyond those of millinery and length of gowns.

There is, however, a special need of the use of one central agency for the actual conduct of the interchange reinforced by the careful selection of the students by the institutions concerned, or by some committees of selection.

Stimulated by the interest in international relations, there is not lacking a suitable supply of men and women for interchange.

The lack is that of money to meet the exorbitant expense of transportation and living.

Men of my generation never dreamed of study abroad except at their own charges. German Universities catered to us at little cost, welcomed us with open hands and brought us into close contact with their greatest Professors. They acknowledged our credentials, initiated us into research and, with the exception of

a few notorious Universities, made us work for our degrees, and sent us home with a measure of devotion to the Fatherland. Some of us caught a glimpse of the charms of the British Universities as we passed by, but no one beckoned us in. There was no intimation that any post-graduate or research work awaited us, or that our American degrees would be recognized. We have yet to create the tradition in the States that the Motherland will do for us what the Fatherland did previously, and is now anxious to do again. France is, however, splendidly seizing the opportunity and maintains an office in the States similar to that in the Universities' Bureau House here.

Two great agencies, the American Council on Education and the American Field Service Fellowships in French Universities, maintain not less than sixty-three fellowships and scholarships annually for men and women in France. For other countries we have similar agencies, like the Civil Relief Belgian Educational Foundation and the American Scandinavian Foundation.

A very few of the larger American Universities and Colleges have a limited number of travelling fellowships for their own graduates. Only in two or three institutions do scholarships exist specifically for British students in America. The need is obvious, that either there should be another great Foundation for fellowships for British students in American Universities or that several British or American Universities should establish such fellowships. President Frank Aydelotte, of Swarthmore College, Pennsylvania, one of the most prominent Rhodes Scholar graduates, has circulated a tentative plan for a Foundation " to establish a system of fellowships open to members of the Universities of Great Britain and Ireland and of the British Dominions for study in the United States." The plan has been favourably received by those who have seen it, among whom have been the heads of many Universities in these Islands. It is a pity that President Aydelotte is not present to lay his plan before this Congress.

If we are not to have a Foundation for British Students to go to the United States, the Imperial College of Science and Technology, London, has set an example which might well be followed by other institutions. Last year it sent four post-graduate scholars, receiving £400 each, for research in the United States, and asked the American University Union to furnish advice and to receive and distribute the funds. The experiment has been so successful that the Imperial College is sending four more scholars the coming year.

For scholars of this generation, in this day of a poverty-stricken world, funds must be available for the interchange of students.

These funds may be provided in various ways, but experience shows that it would be well to have them administered through a central agency for each country in co-operation with a similar agency in the corresponding country. The less machinery the better. The two years' successful experiment with the Universities Bureau and the American University Union proves that all the necessary machinery is at hand. There is need, however, of wider recognition, larger staffs, vigorous representatives in each country and institution, larger quarters to accommodate more nations, and, while not serving as a club, to offer a common meeting place for students and for conferences.

My topic does not allow the presentation of a side of these activities no less important than the exchange of teachers and the interchange of students, namely, the service with reference to larger educational policies. The Bureau and the Union must not be looked upon as mere Bureaux of information with the stilted methods of Government Bureaux, but as directly representative of the Universities—in short, as Educational Embassies and Consulates combined. In the United States there is an agitation to have educational attachés at the Embassies. The Bureau and the Union, without the political perils of Governmental appointment, should have, and in the case of the Union do have, recognition of the Ambassador and the Consul-General.

The principle that true Universities are not only national, but international, that the Republic of Letters transcends all national boundaries, must be conserved. It is reported, incredible as it may seem, that a German Major in Regensburg demanded the deletion of the name Dante in a Dante celebration, asserting that "internationalism cannot exist in Art or Science." In these days of intense nationalism there is a new need that the University graduate in the Social Sciences and Economics, no less than in Literature, Art and Science, should study abroad. All the world has become a laboratory of the student. In this pesudo and proletarian internationalism, to which the underpaid and untravelled teacher is particularly susceptible, Bacon's advice to round out an Education by travel is most apt. The stability of civilization, to say nothing of what Dr. Vincent Naser, President of the Danish Students' International Committee, names the upholding of the "integrity of Science" may rest in no small measure upon the broader outlook and better understanding of the duties and rights of the intellectual classes by the travelled scholar. He will realize the world-wide operation of economic laws against which doctrinaires and sometimes politicians fight.

In an appeal on behalf of St. Hilda's Hall, Oxford, it is said :

"It is time that the women of the Dominions should share in the advantages enjoyed by the Rhodes Scholars." Reference is made to the vast possibilities of friendship between the Dominions and the Mother Country which are powerfully promoted by women students. May not the writer reinforce this appeal, and that of all other Women's Colleges, by adding America to the Dominions in accordance with the pattern set up by Rhodes?

Beyond all University consideration at this pivotal point in the history of the world, when all possible means are sought to ensure permanent peace, can there be any better way than the inter-migration of scholars to keep up what Lord Milner has called "continuous knowledge" between the Commonwealths and General Smuts "understanding," the way to peace, the only alternative to force and war. Not by propaganda, not by attempts to organize a so-called "International University," or a "League of Universities," but by the normal constant inter-relating of the Universities by these migrants will the world-wide influence of the Universities be brought to bear to perpetuate peace. Here is the anchor to the windward for the storm-tossed League of Nations. Though the Universities on both sides of the ocean are over-crowded, ought they not at this critical stage in history to make room for suitable students from overseas? By virtue of my office, representing sixty of the leading Universities, I venture to pledge that the Americans will make room for their British kin. By affording every facility for inter-migration shall not the Universities of the English-speaking peoples seize the opportunity which is now theirs?

GEORGE E. MACLEAN.

DR. CAPEN (Director of the American Council on Education): I appreciate greatly the privilege of being asked to attend this Congress and I regret that I was only able to arrive this morning. But unfortunately the ways of transatlantic steamers are still past finding out.

Perhaps the most useful contribution I can make in the few moments of your time I shall occupy is to give you a very brief account of certain of the American experiments in the exchange of scholarships and fellowships with other countries. Dr. MacLean and others have alluded to the exchange of students between the United States and France. That exchange had a casual and accidental origin. It came about as a one-sided affair when the United States entered the war. A number of American institutions, mostly colleges for women, offered to some two hundred French girls scholarships which included a stipend sufficient to

cover all living expenses. For several years the flow was all in one direction. The undertaking was never formally financed by the United States or by any agency in the United States. Such scholarships and fellowships as were offered were offered by individual institutions. Then two years ago the French Government, in recognition of what had been done, placed at the disposal of a Committee of the American Council on Education some twenty-five or thirty fellowships and scholarships in French Ecoles Normales and Lycées.

In the matter of the British exchange we are still on a one-sided basis. Of course the Rhodes Scholarships were suspended during the war, but, as you all know, since the war there has been greater interest than ever in the United States in selecting our best men to come as Rhodes Scholars. The Trust has had in America the very efficient services of Professor Frank Aydelotte, who was himself a Rhodes Scholar some ten or twelve years back. Now Professor Aydelotte has formulated a plan for completing the organization of an interchange. The plan is still tentative and it is not yet financed. It is possible, however, that you may be interested in a brief outline of what he and his associates hope may be brought to pass.

It is suggested that there be raised a fund to provide fellowships in American Universities for students from the British Empire. To begin with the fund should not be very large. The undertaking should be experimental. There should be ten or fifteen fellowships allotted to selected British Universities—some in the British Isles and some in the Dominions—to try out the plan. Fellowships carrying stipends of fifteen hundred dollars a year should be granted for two-year terms. Primarily they would be available for advanced study in applied science—Engineering, Business, Administration, Medicine and Agriculture. It is suggested that the British Fellows would select within limits the Institutions to which they would go in the United States. If, after a period of some ten years, the plan proves to be successful, it would then be permanently financed on a larger basis, and an annual provision of fifty or sixty fellowships, to be divided among an equal number of British Universities, would be established.

There is as yet no formal arrangement for the financing of the undertaking. That task presents a good many difficulties. Probably you are aware that the American Institutions, in spite of some suppositions to the contrary, have suffered from great financial difficulties since the war. This applies not only to those that are privately supported, on private foundations, but also quite as markedly to the publicly-supported institutions. For a

long time it has been believed by many of us that the State Universities, of which there are just short of fifty in America, had an advantage financially, or at least a potential advantage, over the privately-endowed Institutions. The experience of the last few years has indicated that that question is still open to doubt. The financial stringency has affected the publicly-supported Institutions quite as severely. Indeed, for two or three years, all the energies of our University officers have been devoted to increasing the financial support, in order that the Universities might go forward with the work already planned and organized. We have had endless "drives," most of them, I am happy to say, fairly successful, some wholly successful. But our attention has been so far devoted to the demands of this pressing emergency, that the matter of financing international exchanges has had to wait. As the Chairman said this morning, we also need to stir up our millionaires. I hope that presently we may be able to do it.

Discussion.

SIR DEVA PRASAD SARVADHIKARI, LL.D. (Benares): My lord, Mr. Vice-Chancellor, ladies and gentlemen. Exigencies of manufacture of concentrated essence of wisdom into tabloids, while you wait (for five minutes) will not lend themselves to platitude or rhetoric usual on occasions like this. I shall, therefore, proceed straight away to say—and I am sure my fellow delegates from India, and representatives from the Universities outside the British Isles, will agree with me—how grateful we are to the Oxford authorities for their kind hospitality, and for all the thoughtful arrangements they have been able to make in spite of severe handicaps. In this respect this Congress differs from the last, for here we enjoy, amidst your pleasant and learned surroundings, all the advantage of corporate life, as undergraduates of bigger growth. Let me express a hope that some day—when you and we are fairly settled down in the big world's affairs—it will be possible for us to have a Congress in India, in spite of distance and climate conditions. A larger commingling of the East and West in academic regions will then be possible, which will be the solution of many outstanding difficulties that now trouble the statesman, the administrator, the socio-political philosopher, and leaders of men in different spheres of life and activity. To us in India the British Universities have, in the near past, been sources of inspiration and assistance, of which full advantage has been taken. It will be continued to be taken to a larger or smaller degree for many a year to come, till our own equipments at the other end are complete. And let me hope that when our arrangements are somewhat better advanced, your teachers and students will come to us, and come with benefit to themselves and to the Empire, which belongs to us in common. And let me also hope that some measure of hospitality may be expected from other overseas Universities, when the mist of misunderstanding slowly lifts.

We are in the meantime met with great problems—some of principles, some of details, which are being investigated in a business-like manner by Lord Lytton's Committee. It has been charged to inquire why such a large body of Indian students—two to three thousand in number—find it necessary to come to this country, and why a considerable body is obliged to drift abroad because they cannot find, here or in India, what they want. Closely allied with this problem is the great problem of Governmental Reform in India, some first steps regarding which have just been taken. The first measure of justice towards that

Continent, is being taken by partners who have been long neglectful of the realities of the situation, and of consequent duty. Honest study of history, and diligent appreciation of the situation, have been helpful in discoveries that have made these first steps possible, and it is of the utmost importance that both Indian and British Statesmen and Administrators, and those who are to take their place in the near future, should drink deep of these inspiring life-giving and elevating draughts, which will place Indian claims on an unassailable and ever-expanding basis. Mr. Das Gupta has shown how the need of study of the essential art of Government and administration must be recognized by Universities, here as well as in India. Sir Nilratan Sircar, whose admission to the membership of the Oxford and the Edinburgh Universities is a great honour to India, has shown that you cannot neglect Commerce and Industry. Mr. MacKichan has pleaded for philosophy, Mr. Banerjea for Economics, and Mr. Raman for Natural Science, in all which domains more or less important post-graduate work is being attempted in India.

In this country also, I am glad to acknowledge, our post-graduate students are receiving generous hospitality of which they have not proved themselves unworthy; for graduate students, as well as undergraduate students from India, are also thronging here in large numbers. My appeal to the University authorities would be earnest for considerate treatment of their claims in regard to facilities such as they may prove themselves to be entitled to. Greater attempts will, we hope, be made at the Indian end, for removal of the causes, at least some of them, that make it necessary and obligatory for such large numbers to come. At the same time I feel sure there will and can be no interference with those who want to come, and will come, though they need not come. Universities here are all autonomous and self-governing bodies, with whose unfettered discretion there can be no attempt at interference from any quarter. To us it is open only to represent, inform, and appeal on the question of facilities for admission of Indian students here. It may well be pressed that Indian Arts and Science qualifications should have adequate recognition in the way of "Equivalence" here, which has not in every case been done. It may further be represented that tests in spoken English, insisted on in some Universities, even in the case of our graduates, may be done away with. It may also be represented that there should be no insistence in the case of medical students on the knowledge of Latin in days when its study is being made optional even in the Oxford and Cambridge Universities. It may also be represented that preliminary

training in Engineering works, before a student joins Engineering departments of some Universities here, should not be insisted on, but that the "sandwich" system should be amplified. There are thus several details into which there is no time to go at the Congress, but which may and must be considered by a Committee of Vice-Chancellors and other associates, and by the Universities' Bureau—or by some suitable agency that may be specially set up for treatment of these questions.

Indian Universities have availed themselves of teachers from your Universities whenever possible. Mr. Thomas, of the India Office Library, has been recently at Calcutta. Prof. Craigie and Prof. Macdonald from Oxford will soon be on their way there, and others may be arranged for soon. In the same way, if there be real inclination for exchange, I am sure services of men like Mr. Maitra, Mr. Das Gupta, Mr. Raman, Dr. Bal and Mr. Banerjea, all of whom will be making a more or less long stay here, may be available. State scholarships may be regulated to suit the requirements of the time, and representations in this direction are already before Mr. Montagu, who as Secretary of State has given abiding proofs of his real and loving concern that India should be allowed her proper place in the Empire. A body of Administrators will have to be built up, who will be able to shoulder their new responsibilities with vigour, so that Reforms just initiated may not languish for want of capable and conscientious workers, but on the contrary may grow from more to more.

India has her background of culture and preparation which it will be for you to value and to supplement if the same Imperial obligations, the sense of which actuates this appeal, commends itself to you. It is an obligation you owe to yourselves, the Empire, nay, the world. The British Empire has to be kept together, and advanced and elevated not alone for the good of those with whose destinies it is directly concerned, but also for the good of mankind at large. The East, which made a good beginning many hundred years ago by presenting Christ and his teachings to warring West, will still furnish resources for restoration and uplifting of that Faith for which Sir Michael Saddler, so eloquently pleaded. He wants not enlarged or increasing erudition so much as "change in methods and means." He pleads for beauty—even if it be in flags or processions—such as in India must have impressed and inspired him. For this commingling of the East and the West, I join in his pleading, and to it shall we owe restoration of banished ideals in Ethics—nay, the Restoration to its lost pedestal of Righteousness which alone exalteth Nations and can help in bringing back banished ideals of true Godhead.

J. L. GLASSON, M.A. (Tasmania): It is with great diffidence that I venture to address you this afternoon. I fear I shall be offering you cabbages instead of roses, but there are one or two things I want to say in reference to the paper which Prof. Wilson has brought before you. It has been a most important paper from the point of view of all Australian teachers in Universities, and I feel that he has not quite done justice to the case. He has proclaimed himself a whole-hogger, but is afraid lest he may have stung the New South Wales taxpayer rather severely. If that is the case, I am all for the scorpions. He does not make his claim for Sabbatic Leave in as strong a way as he might do. The man in Australia who is engaged in developmental work, in organization, in engineering, realizes the need of foreign travel. He sends his metallurgists and his engineers to foreign parts, and I don't think we have got to convert the ordinary business man, the up-to-date Australian business man, to the idea of a Research Year for professors. The Sabbatic Year is the name we give it, but I am afraid that the name is rather fatal. It conveys the idea of leisurely repose after lunch, or the still worse idea of a continental Sunday. Let us rather call it a Research Year, and then we shall be able to carry conviction. Prof. Wilson goes on to establish a principle of differentiation—of differentiation between professors and the rest of the staff. The professor, he says, must have this Research Year, the reviving influence of the Sabbatic Year, because he needs it more. I don't think this damaging statement ought to be too readily put forward. The idea that the staff of a department is like a railway train, the engine in front doing all the work—the professor—and consuming a lot of coal and puffing very hard and getting the train along at a great rate; I don't think that is the right conception. Our staff must each get his own power. Each member of the Department should be getting his own inspiration, and I don't see how it is possible to secure this in Australia unless we allow our junior staff to share in the advantages which have been won for the senior staff of the University of Sydney. Harvard, to whom we look as our exemplar in this matter, selects its senior staff from the junior staff. I cannot imagine that they reserve their Sabbatic Year for their senior staff alone, and allow their younger men to stagnate at home throughout all the earlier part of their career. Let us hope, therefore, that by the example which Sydney has set before the Universities of Australia they may be still further extended. Prof. Carslaw tells us that it is their intention that it should be. They will then be conferring a great boon on the rest of the scientific workers and University teachers of Australia.

This advantage should be extended, I think, to every member of a University who is permanently engaged in University teaching and research. A man who is making University teaching and research his life-work, whether he be a professor or a reader or a senior lecturer or a junior lecturer, needs the benefit of the Sabbatic Year, and we hope that Sydney may set a good example to the Universities of Australia.

PROFESSOR BARTOLO, B.Litt. (Malta): I beg to say a few words on the general subject, as being one in which I have taken a personal interest for some years. About this time last year I had the privilege of being a member of the Imperial Press Conference, and amongst the subjects of discussion which I proposed was one which was very closely connected with the one which is now under consideration. It was a resolution to the effect that the Imperial Press Conference should record its vote in favour of the advisability of bringing the various curricula of all the Universities of the British Empire as much as possible into line, consistently with the requirements of each, so as to facilitate interchange of professors and students. Although, strictly speaking, that matter did not come within the scope of the Imperial Press Conference, it was allowed to be discussed and examined and was finally approved unanimously. Unfortunately, they made a slight amendment. My resolution was to the effect that the Imperial Press Conference should record its vote on the general principles and refer the discussion of the general scheme to the Congress of Universities of the Empire which had already been fixed to meet this year. The Conference, however, thought otherwise. They thought it might appear as undue interference, so it limited itself to registering a vote in favour of the broad principle without reference to this Congress, with the result—regrettable, as I think it—that the Bureau of the Universities of the Empire was never officially notified of this resolution. On the other hand, I think that the adoption of the resolution, which I then had the honour to propose, has achieved something; for we now know that whatever steps this Congress may deem proper to take in the matter will receive not only the whole-hearted sympathy but the constructive support of the whole Press of the British Empire. It is on all hands agreed that interchange of professors and students is a consummation devoutly to be wished; but the question of ways and means—I am not referring to the financial question here—does present some serious difficulties, and I think it should be the special task of this Congress, and, indeed, one of the practical results of our meetings here, to smooth away these difficulties as

much as possible, and definitely pave the way for the successful operation of a scheme of interchange of professors and students. The first and greatest difficulty is how to get over that inevitable diversity of curricula, of standards and of systems existing among the various Universities of the British Empire, which reflect the character of the British Empire itself, which, as we all know, is every day seeking for new and sound ways of reconciling the unity of the whole with the autonomy and individuality of all of its component parts. We have been told by a great Imperialist that British Imperialism is not characterized by what it takes away, but by what it gives, by what it adds. We are all members, all nationals of some country ; we have our own local and national patriotism ; but, over and above that, we are members of a Commonwealth ; we have an Imperial and wider citizenship—whatever our race, our tongue, our creed, our local conditions and circumstances. Therefore, I submit that the same thing should apply to the relations between the various Universities. We have got to see the way to maintain the individuality of each, and at the same time have a sort of bond of union. Each University retains, and must retain, its own culture and conditions, its own systems, its own curricula, without, however, ceasing at the same time to be a member of that larger organization, the League of Universities of the British Empire, which constitutes, so to speak, the learned family of the British Empire Commonwealth. With this object, with the object of achieving, or at all events promoting, this unity between the various Universities, and at the same time maintaining and respecting for each its characteristic individuality, and thus avoiding the necessity of casting them all into the same mould, I beg to submit the advisability of instituting one or more Imperial Degrees—that is to say, Degrees which should not be particular, peculiar to one University, but accessible and common to all the Universities of the Empire. Assuming, for the sake of argument, the acceptance of the broad principle, three things will have to be considered : what should be the essential subjects, how and where studies are to be conducted, and how and where examinations are to be conducted. The answer to the first question would depend on the nature of the Degrees to be instituted. I am not competent to speak on scientific matters, but as I happen to be a graduate of Literature and the Law I will give you an instance of what might be done in this respect. The establishment of a Degree in Science should offer no serious difficulties, for science is international and universal. The question of a Degree in Literature would not be so easy, but would not be insurmountable. One essential subject would have to be the

English Language and Literature, for to confer an Imperial Degree upon one who has not a general good knowledge of the language and literature of the Empire would be preposterous and inconceivable. Another essential subject would, I submit, be a general knowledge of the historical geography of the British Empire. A classical language would also be a *desideratum*, but, considering that Latin or Greek, or both, are thoroughly taught and studied in practically all the Universities, a choice would be easy. Then there would be a modern language necessary, and I should say in this respect allow a wide range of selection. I should say that the students ought to be allowed and enabled to pursue their studies in their Universities, but the examination should be conducted by a central authority here in the United Kingdom. Naturally every University would be free to join or not in the scheme.

Then as to the manner in which it should be carried out, I propose that the Universities Bureau should draft a scheme, circulating it amongst the various Universities of the Empire, inviting suggestions and criticisms.

May I just have one moment to record my sense of high appreciation and gratitude for all the kindness which has been lavished upon us. We shall all return home all the wiser and all the better for our association with this great city, which so justly prides itself upon being the seat of one of the most famous Universities in the world.

At the close of the Final Session of Congress

PRESIDENT SIR ROBERT A. FALCONER said: Mr. Chairman! Those of us at least who have come from overseas wish to give expression to our sense of gratitude to our Oxford friends for the splendid hospitality that they have shown to us during the meeting of this Congress.

It was a most happy thought on the part of those who arranged for this meeting to have it convened in Oxford, and I am confident it will be recognized by every one as having been an act of graciousness on the part of the authorities in Oxford to respond to the request, whoever made it. During these four days that we have been entertained with such great kindness, and with that traditional hospitality that I think must find its home in Oxford, we must all have felt that the benefits of this gathering have consisted not alone or chiefly in the papers of which abstracts have been read—as one who read a paper I am disposed to think that they were a very minor element in the success of the meeting. The real success, I think, consisted, not only in the general discussion,

but in the opportunity that has been made possible, through the hospitality of Oxford, for us to meet not only those in Oxford with whose names we have been familiar for years on a very much more intimate basis than would otherwise have been possible, but also to enjoy the general environment of Oxford, and the rest, and the calm, and the general sense of propriety that belonged to the Congress, because it, in turn, belonged to such an environment. I have the very greatest pleasure in moving a hearty vote of thanks to the Vice-Chancellor of Oxford and to our hosts in Oxford, whose hospitality could not have been surpassed.

SIR DONALD MACALISTER: May I be allowed, as coming from one of the Home Universities, to second the resolution which has been so admirably voiced on behalf of the Overseas Universities by President Falconer.

I can assure all here that from the first time that it was proposed that we should come to Oxford we have had nothing but the greatest encouragement and help in endeavouring to make this gathering at the centre of British University life completely and happily successful, and on behalf of the Organizing Committee I strongly desire to second what President Falconer has expressed —our entire and whole-hearted thanks to the University of Oxford in the person of the Vice-Chancellor, not only for receiving us here, but for the hospitality which has made our intercourse with one another so happy and so memorable.

PRINCIPAL MAITRA: I desire, on behalf of the delegates from India, to say that we associate ourselves in the most cordial manner possible with this expression of gratitude to Oxford for its splendid hospitality and for the opportunity that it has given to us of coming in intimate contact with great scholars from other Universities so as to cultivate a spirit of true fellowship. I believe that the formal proceedings of this Congress are the least important part of its work. The opportunities of close intercourse and of awakening of intellectual sympathies are far more precious than anything that we say in the papers read or the speeches made from this platform.

I believe that the Universities have a great part to play in the future of the world in bringing about that era of enlightenment to which we all look forward. I beg again to say that we from India associate ourselves wholly and most cordially with this expression of gratitude to the organizers of this Congress and also to Oxford for its splendid hospitality.

The resolution was carried by acclamation.

In reply, THE VICE-CHANCELLOR said: I am very much touched by the very kind resolution that you have passed and the warm expressions with which it was put to the meeting, and I know that when I convey it with much feeling to my colleagues on the Council they also will be delighted.

I can only assure you, when you speak of gratitude, that one hardly likes to be thanked for a work that was so pleasant. "The labour we delight in physics pain." So far as I was concerned, there was no pain. More than you thank me, you have to thank my Committee for having taken so much of the mere business work off my shoulders. When we first heard the Congress desired to come to Oxford we were very glad and very proud. In spite of the fact that we had had various Royal visits we felt that this was of more value than any Show, and it was felt to be a great opportunity, a great delight, and we wish we could have done three times as much to make your sojourn here both profitable and pleasant; because, as you express your gratitude to us, I must make the retort courteous and assert that we also owe you much. You have given us a very delightful week, far more delightful to me than the various weeks I spend on endless Committees. I have had the pleasure of listening rather than of helping, and I hope you feel the same as I feel, that many things have been said that will really germinate in the future. I will do my utmost here to see that some of them do.

When we heard of your projected visit, all that really was necessary was to inform our beautiful Colleges—we are proud of them naturally—and many private friends that a certain number of gentlemen and ladies from over the sea were coming to honour us, and would they help us? and they all came with the greatest promptitude and spontaneous pleasure to offer you hospitality. I am glad that you have enjoyed your visit: I do not wonder you have enjoyed it because I do not think there are any more beautiful habitations of man than the Colleges of Oxford and Cambridge. It is now quite fifteen years ago that, at the tercentenary of the Bodleian, we had any gathering of like proportions in its representatives as this; but this Congress transcends the gathering to which I refer because that came together for commemoration; this has come for very high University international business which I hope will really ripen into abiding fruit for us and all of us. Thank you!

REPORT

OF THE

BUREAU COMMITTEE.

BUREAU COMMITTEE.

REPORT TO THE DELEGATES ATTENDING THE SECOND CONGRESS OF THE UNIVERSITIES OF THE EMPIRE.

"THE establishment of a Central Bureau; its Constitution and Functions" was a subject selected for discussion by the Congress of 1912. Dr. (now Sir George) Parkin, Organising Secretary of the Rhodes Trust, in the last paragraph of the paper which he read to the Congress (vide *Report of Proceedings*, p. 309) gave it as his opinion that a Central Bureau was a necessity "to carry on the work initiated by the present Congress—to maintain its connexion with any that follow, to furnish a channel of free communication in the intervals." At the Meeting of Delegates held at the close of the Congress it was resolved: "That a Committee of this Congress be now appointed to take steps for the formation in London of a Bureau of Information for the Universities of the Empire; and that it consist of seven members representing the Home Universities and seven members representing the Universities overseas." The Delegates from overseas proceeded thereupon to the nomination of their representatives; the members of the Committee representing Home Universities were subsequently appointed by the respective governing bodies.

The following were the members of the Bureau Committee appointed in 1912:—Prof. W. H. Bragg, M.A., F.R.S., representing *Australia*. President R. A. Falconer, C.M.G., M.A., D.Litt., LL.D., one of the two representatives of *Canada*. H. T. Gerrans, M.A., representing *Oxford*. Prof. R. F. A. Hoernlé, M.A., B.Sc., representing *South Africa*. Prof. Sir T. H. Holland, K.C.I.E., D.Sc., F.R.S., representing *India*. J. W. Joynt, M.A., representing *New Zealand*. Principal Sir Donald MacAlister, K.C.B., M.A., M.D., D.C.L., LL.D., F.R.C.P., representing *Scotland* (Chairman). Principal Sir Henry A. Miers, M.A., D.Sc., F.R.S., representing *London* (Treasurer). Vice-Chancellor Sir Isambard Owen, M.A., M.D., D.C.L., F.R.C.P., representing *Birmingham, Bristol, and Wales*. Vice-Chancellor Michael E. Sadler, C.B., M.A., LL.D., representing *Durham, Leeds, Liverpool, Manchester, and Sheffield*. R. F. Scott, M.A., Master of St. John's, representing *Cambridge*. Prof. N. Tagliaferro, I.S.O., representing *Hong-Kong and Malta*. President H. Marshall Tory, M.A., D.Sc., LL.D., one of the two representatives of *Canada*.

In 1914 Prof. R. F. A. Hoernlé, having resigned, on his appointment as Assistant Professor in the University of Harvard, was

replaced by Prof. (now Principal) T. Loveday; and Prof. N. Tagliaferro, having resigned on account of ill-health, was replaced by the Right Hon. Sir Cecil Clementi Smith, P.C., G.C.M.G., on the nomination of the University of *Hong-Kong*. Sir C. Clementi Smith died in 1916, and was replaced by Prof. Carmelo Samut, on the nomination of the University of *Malta*. In 1918 Mr. H. T. Gerrans and Mr. R. F. Scott, having retired owing to pressure of other duties, were replaced, respectively, by Dr. T. C. Fitzpatrick, President of Queens' College, Cambridge, and Mr. E. M. Walker, of Queen's College, Oxford.

Sir Henry A. Miers, having been appointed Vice-Chancellor of Manchester in 1915, resigned in 1918 his seat on the Committee, and was replaced by Sir E. Cooper Perry, M.D., appointed by the University of *London*. In 1920 Sir W. H. Bragg, K.B.E., having resigned, in order that he might devote his time to scientific research, was replaced by Prof. J. T. Wilson, F.R.S., as representing *Australia*. During the present year Prof. Carmelo Samut, having resigned on account of ill-health, has been replaced by the Right Hon. Sir Frederick Lugard, G.C.M.G., C.B., D.S.O., D.C.L., LL.D., sometime Chancellor of the University of *Hong-Kong*, on the nomination of that University.

Your Committee now beg leave to report upon the work of the Bureau during the nine years which have elapsed since the first Congress assembled in London :—

At the urgent request of the Committee, Dr. Alex Hill, who from the date of Dr. R. D. Roberts' death in November, 1911, had acted as Organizing Secretary of the First Congress, but who, at the time, had other work in contemplation, undertook the organization of the Bureau as Honorary Secretary. The Organizing Committee of the Congress as their last act before dissolving "authorized the Chairman to write to the Secretary, Dr. Hill (who was prevented from attending the meeting), on behalf of the Committee, expressing their great satisfaction and deep sense of gratitude on hearing that he had consented to act as Honorary Secretary to the Formative Committee of the Bureau."

As a first step it was necessary to secure an office, and the Committee desire to express their sincere gratitude to the Director of the Imperial Institute for placing a room at their disposal for the purpose.

The Honorary Secretary next proceeded, on behalf of the Committee, to secure contributions from the Universities for the maintenance of the Bureau, to procure the appointment of a correspondent in each University, to plan the *Yearbook* and to prepare the sections relating to the several Universities, and to

correspond with the Universities regarding the services which the Bureau might hope to render to them.

Any attempt to report in detail upon the work of the Bureau since its establishment in 1912 would entail the publication of a volume of considerable dimensions. Your Committee propose to content themselves with a short account of its history and a brief summary of the more important of its varied activities.

In 1913, when the Bureau was fairly started, Dr. Hill asked that a paid Secretary might be appointed in his place. The Committee agreed to appoint an Assistant Secretary, and were very fortunate in securing the services of Mr. W. H. Dawson, of the Indian Civil Service; but asked Dr. Hill to continue to supervise the work as Honorary Secretary.

In August, 1914, Mr. W. H. Dawson enlisted as a private. His brother, Mr. A. J. Dawson, the novelist and assistant editor of the *Standard*, undertook to act as his *locum tenens;* but he also, before the end of September, had joined the Army. From that time until Mr. Dawson's return in July, 1919, after demobilization, Dr. Hill, with the able assistance of Miss Potter, Clerk to the Bureau, "carried on" the work. Throughout this period he spent, as a rule, at least two days each week in London, and attended to the correspondence forwarded to him at Southampton. In July, 1919, at the request of the Committee, Dr. Hill agreed to resign the principalship of the University College of Southampton and to devote the whole of his time to the Bureau, to which, on this condition, he was appointed Secretary for a period of three years. Dr. Hill was not able to obtain release from his College office for this purpose until April, 1920.

In December, 1918, when University activities, national and international, suddenly revived, application was made to the Chancellor of the Exchequer for a grant to enable the Bureau to meet the increased responsibilities which had, for reasons which will appear in the subsequent portion of this Report, devolved upon it. In response to this application the Treasury made a non-recurrent grant of £5,000, to enable the Bureau to acquire and furnish premises suitable for its purposes. The lease of No. 50, Russell Square, was purchased by the Committee. In accordance with a scheme for housing the "consulates" of foreign Universities in the same building with the Bureau, rooms were let to the American University Union in Europe, the Office National des Universités et Ecoles Françaises, and the British Bureau of the Danish Students' International Committee representing the University of Copenhagen (on the understanding that the room is to be shared with other Scandinavian countries, if and when,

they are prepared to establish Bureaux in London). It is unnecessary to point out how great are the facilities which this arrangement affords for the efficient discharge of the international service of the Universities.

Two conditions were attached to the Grant by the Treasury, viz. :—(1) that the Bureau should become a corporation capable of holding property, and (2) that the Universities should make adequate provision for its maintenance. The first condition allowed of two alternative courses: application for a Royal Charter, or incorporation as a company under the Companies Acts. As a charter would not have been obtainable without a long delay, and at considerable cost, application was made to the Board of Trade (and granted) for the incorporation of the Bureau as a company under Articles of Association, with the omission of the word "limited."

Articles of Association.—Dr. C. S. Kenny, Downing Professor of the Laws of England, very kindly prepared the first draft of Articles of Association. Dr. Kenny's draft was submitted by Messrs. Freshfield and Leese to the Board of Trade, after further elaboration by counsel employed on behalf of the Bureau in conjunction with counsel to the Board. As approved by the Board of Trade, the Articles of Association were accepted by the Treasury as fulfilling its first condition. In the autumn of 1920 objection was taken to certain of the Articles as approved by the Board, on the grounds that (1) Article 4 might be interpreted as conferring upon the Executive Committee the option of admitting or of refusing to admit as members of the Association persons duly appointed by Universities or by groups of Universities as their representatives on the Bureau Committee, and (2) that the term for which members of the Association were to hold office was not defined.

The Executive Committee thereupon took steps to secure the amendment of the Articles in such a way as to remove any ambiguity with regard to these points. The Articles as amended were approved by the Board of Trade, and have been distributed to all the Universities of the Empire.

Experience has shown that the Bureau can be of service to the Universities in a variety of ways. As these have been enumerated in the pamphlet on OBJECTS AND AIMS, already circulated, it is unnecessary to dwell upon them in this Report. It is not without interest, however, to point out that the Bureau cannot be said to take action of any kind on its own initiative. It carries out the directions of Congress and of University Conferences. It serves as the Secretariat of the Committees which Conference has, from

time to time, set up. For the rest it is a medium of communication between the Universities, between Government Departments and the Universities, and between the Universities of the Empire and those of foreign countries. Thus when a difficulty arose in carrying out the Representation of the People Act, 1918, in University constituencies, the Parliamentary counsel consulted the Bureau, which summoned a meeting of the Returning Officers of Universities to consider the point. An order in Council was thereupon drafted, submitted to, and approved by, the King in Council. At various times the Board of Education, the Foreign Office, the Colonial Office, the India Office, and the Treasury have communicated with the Universities through the medium of the Bureau.

From the first the Bureau has been a bureau of information on all matters relating to Universities. Since its transference to Russell Square the number of inquirers who call at the office has very greatly increased. As might be expected, a considerable percentage of the questions asked relate to the practice of the Home Universities. Such questions might properly be addressed to the officers of the particular University which they concern, but the inquirer is often unaware of the quarter in which information should be sought. Large numbers of foreigners expect to obtain, not information only, but advice. In all cases in which the answers are within the knowledge of the staff or can be ascertained by reference to published documents in the library, they are given. If the answer is not known, the inquirer is referred to the proper authority or society or institution which has the business in its charge.

The following may be quoted as an illustration of a form of service which the Bureau will gladly render to scholars: A request was received from Mr. Raamsdonk, of the University of Tasmania, that a transcript of a pamphlet by Morlini (*opus Morlini complectens novellas fabulas et comoediam*, etc., Paris, 1799) might be made. Thanks to the courtesy of the Keeper of the Printed Books, a transcript was prepared. In a letter dated January 14th, 1921, the University of Tasmania proposed as a subject for discussion by Congress "That it is desirable that one of the functions of the Universities Bureau should be the provision of means whereby scholars in distant parts of the Empire may obtain extracts from, or copies of, books, MSS., and other material which are in England or elsewhere, in order that they may be assisted in such studies as they have undertaken."

The University of Cape Town also proposed as a subject for discussion by Congress "The establishment in London of an office

through which may be obtained, at the expense of the applicant, copies, translations, or photographs of scientific papers."

In July, 1919, a letter was received from Mr. C. J. Phillips, asking that facilities might be given for the continuance of the work of the Committee formed under the Chairmanship of Lord Eustace Percy for furthering the exchange movement amongst women students between the United Kingdom and the U.S.A. For this purpose a Women's Advisory Committee of the Bureau was set up, and in January, 1920, a woman Assistant Secretary of the Bureau was appointed for one year at a salary of £400, with permission to act as Secretary of the International Relations Committee of the British Federation of University Women, in promoting the establishment of the International Federation of University Women. The latter was duly inaugurated at a gathering at Bedford College in July, 1920.

After the termination of her engagement as Assistant Secretary of the Bureau, Miss Bosanquet was appointed Secretary to the International Federation of University Women. The Women's Advisory Committee was then discharged.

In their work for the Universities of the Empire, your Committee have not recognized any distinction between men teachers and women teachers, or men students and women students, nor have they yet discovered any services required by the one sex which are not equally required by the other. They are, nevertheless, persuaded that it is undesirable that membership of the Bureau should be restricted to men, especially as there still are Women's Colleges which, not being constituent parts of any University, cannot be said to be represented on the Committee. They have therefore resolved to propose to the Delegates :—

> " That with a view to the representation of such University interests of women, whether students or teachers, as are not identical with those of men, it be proposed to Congress, that if no woman be appointed to the Bureau Committee as representative of a University or group of Universities, power be conferred upon the Committee to co-opt one or more women to its membership."

Report on Hostels.—Shortly after the Congress of 1912, an application was received from a South African College for information and advice regarding the establishment and management of residential hostels for students. Confidential inquiries addressed to the heads of all hostels in the United Kingdom led to the collection of an exceedingly interesting body of statistics, facts, and opinions. These returns were printed in tabulated form, without giving the names of the institutions from which the

information and comments had been derived. Copies have been placed at the disposal of the Universities.

Yearbook.—The first issue was published in 1914. It was a conspectus of the Calendars of the Universities of the Empire, compiled with a view to supplying the information most likely to be needed both by those who are responsible for the administration of the Universities and by students, especially such students as are seeking opportunities of advanced study and research. In addition to particulars regarding *personnel*, equipment, curricula, degrees, hostel accommodation, etc., each section contained a record of the outstanding events in the life of the University during the preceding year. These records will hereafter serve as material for the history of the Universities. Information on various subjects of common interest was embodied in a series of appendices.

The second issue appeared in 1915. In it are recorded the War Rolls of the Universities of the Empire, up to the date of publication. Its appendices, of which the greater part had been drafted by Mr. Dawson before he joined the Army, contain summary accounts of the requirements of the various licensing and diploma-giving bodies responsible for admission to various professions, such as those of accountants, architects, estate agents, chemists, engineers, solicitors, surgeons and physicians, pharmacists, secretaries, and surveyors.

To the 1916–17 issue were added appendices on certain scholarships open to graduates.

The preparation of the issue for 1918–20 entailed very considerable labour, owing to the great changes in the Universities, which, since the Armistice, the increased demand for University education had necessitated. Into an appendix of forty pages is condensed a series of reports of the War-work, other than in the combatant services, of the Universities. The book also contains chapters introductory to the sections relating to the United Kingdom, to Canada, to Australia, to South Africa, and to India.

In the issue of 1921 the appendices on the requirements of professional licensing and diploma-giving bodies are revised and brought up to date. The requirements of the Teaching Profession are included. An appendix on scholarships open to advanced students is added. A beginning is made in describing the Universities of Foreign Countries.

At Mr. Balfour's suggestion a HANDBOOK OF THE UNIVERSITIES of the United Kingdom was prepared in 1918, for distribution in connexion with the visit of the Universities' Mission to America. It was published by the Board of Education.

Shortly after incorporation a pamphlet on the AIMS AND OBJECTS of the Bureau was widely distributed amongst the Universities of the Empire.

At the request of the Conference of Canadian Universities a pamphlet on the REGULATIONS FOR DEGREES of the Universities of the United Kingdom was prepared in 1920. Its substance has been incorporated in the *Yearbook* for 1921.

Also in 1920 returns were obtained of the students from the King's Dominions overseas and from foreign countries who were studying in the Universities of the United Kingdom. These were tabulated under countries and under Universities. The list contains 3,935 names. It has proved useful not only to Universities, but to various Government Departments, to Foreign Embassies, to Societies interested in affording hospitality to foreigners, to National Clubs, and others.

At various times the periodical issue of a *Bulletin* has been under consideration, and materials have been collected; but when the attempt has been made to prepare them for publication it has been found that they were not of sufficient interest to justify the labour of compiling or the cost of printing them. To obtain anything like adequate reports of events taking place from month to month in the Universities of the Empire would require the organization of a world-wide body of correspondents, themselves concerned in the administration of their Universities, and zealous for their proper presentation to the University world, and the appointment of an Editor who could give the greater part of his time to the task. In the view of the Committee the cost of such a journal would be prohibitive.

Before the War the Bureau issued, weekly, for display on University screens, a printed Bulletin of *Appointments Vacant*. It was thought that by this means the Universities might be saved some of the expense of advertising, and that graduates would be better informed of opportunities of advancement. But there was but little evidence that the expense involved was justified. During the War such announcements as the Universities sent to the Bureau were typed and distributed to the heads of the departments concerned. All announcements received from Universities overseas are sent to the heads of appropriate departments in all Universities and Colleges of the United Kingdom, and to Secretaries of Appointment Boards. Many facilities for the selection of candidates are also afforded to the Universities overseas. The Bureau undertakes the work of corresponding with candidates and with the persons recommending them. When a member of the University concerned is in England

arrangements are made by which he can obtain interviews with candidates. If requested so to do, the Bureau further arranges for obtaining the services of a small Advisory Committee of referees, expert in the subject for which a teacher is sought. University men and women who desire to obtain appointments frequently call at Russell Square. They are referred to the Appointments Boards of their Universities.

Some of the activities of the Bureau were brought almost to a standstill by the War, but duties which could not have been foreseen were thrown upon it. During the first year of the War the Honorary Secretary undertook, at the request of the Home authorities, to correspond with the Universities and Colleges of some of the Dominions overseas, including 118 Indian Colleges, and of all neutral countries, more particularly those of the U.S.A. To every university and to most of the colleges and other institutions concerned with higher education in these countries he despatched parcels of books and pamphlets on the causes of the War and the responsibility for it of the Central Powers—and on the methods by which they were prosecuting it. All literature was supplied by the Foreign Office. Much of it had been translated into foreign languages. Replies from these Universities and other institutions were referred to the Central Committee for Patriotic Organizations ; answers to inquiries were drafted by the Honorary Secretary on the advice of the Foreign Office or of the Central Committee, and issued as from the office in the Imperial Institute.

The preparation for publication in the YEARBOOK of 1915 of the rolls of members of the staffs and students who during the first two years of the War voluntarily responded to the call for Service involved considerable labour, owing to the form in which returns were furnished by the Universities. As received by the Bureau the lists included the names of all members, past and present. The rolls as published in the YEARBOOK were restricted to those who at the time of enlistment were teaching or studying in the Universities.

CONFERENCES.

The first meeting of Conference, in May, 1917, at which attendance of representatives of the Universities and non-constituent University colleges of the United Kingdom was large, may also be said to have been a direct outcome of the War. The Conference was summoned to consider the situation arising out of the closing of the German and Austrian Universities to graduate students from the countries of the Allies ; but assumed the much wider scope

indicated by the following resolution, adopted *nem. con.*: "For the better promotion of research in this country, and for the encouragement of advanced work by 'graduate' students from abroad, a degree or title of Doctor should be instituted . . . etc." (Proceedings printed.)

This Conference, which may be referred to as the Standing Conference, to distinguish it from various other Conferences which have been summoned to consider special questions, has been adjourned from time to time. On reassembling in May, 1918, the Conference resolved: "That after hearing the reports from the Universities on the resolutions adopted by the Conference in 1917, the Conference reaffirms these resolutions and commends them to the Universities as a basis for common action." (Proceedings printed.)

At this, the second, meeting it was unanimously agreed: "That this Conference considers it desirable, in the interest of the Universities and of the nation, that steps should be taken to promote co-operation and mutual consultation among the Universities of Great Britain and Ireland." It was further resolved, *nem. con.*: "That the Vice-Chancellor or Principal of each University, or a deputy appointed by him, together with the Executive Committee of the Universities Bureau, be appointed a Standing Committee to consider any matters of common interest arising out of the proceedings of this Conference or submitted to it by the Government, and to report from time to time to the Conference."

Conference next met in May, 1919, to receive and consider the offer by the Government of a non-recurrent Grant of £5,000 to the funds of the Universities Bureau, and the steps to be taken to meet the conditions laid down by the Chancellor of the Exchequer.

During the discussion of the Second Condition, viz., "that the Universities undertake to provide funds adequate for the maintenance of the Bureau," there was gratifying evidence of the confidence which the Bureau inspired. Before its inception expression had been given to misgivings lest it should be so managed as to constrain the Universities to uniform action and thus to curtail their liberty. At this meeting Sir Alfred Dale, Vice-Chancellor of the University of Liverpool, said that: "Since the first establishment of the Bureau the whole sentiment of Universities towards it has changed. They now recognize the necessity for an organization capable of promoting co-operation and speaking for the Universities as a whole."

It was resolved "that each of the Universities of the United

Kingdom be invited to contribute £100 a year for three years towards the maintenance expenses of the Bureau."

At an afternoon session Conference considered, amongst other matters, the tenure of University Offices, Superannuation, Provision of Pensions.

A special meeting of the Standing Conference was held in July, 1919, in order that an opportunity might be afforded to representatives of Universities of the King's Dominions overseas, who were still in England in connexion with the War, of meeting their colleagues of the United Kingdom. Representatives of American Universities who, for the same reason, were in England, were also invited. Representatives of the Universities of the United Kingdom, and Captain Holme of the University of Sydney, who at the invitation of the French Government had taken part in the Mission to the Universities of France, attended the Conference and gave accounts of their experiences and impressions. Dr. C. R. Fish, sometime Director of the American University Union in Britain, read a statement, prepared by Dr. Duggan, setting forth the objects of the American Institute of International Education.

Conference then took up the question: "In what ways the Universities Bureau may be of wider service to the Universities of the Empire and of allied and friendly countries." A report on this question drafted by Prof. Ramsay Muir and signed by him and Sir Gregory Foster was circulated among the members present. It was resolved to submit the report to a Special Committee consisting of the Bureau Committee, with the addition of seven members of the Conference, including Captain Holme, for consideration, this Special Committee to draw up a statement on the subject suitable for circulation to the Universities after submission to an adjourned meeting of the Conference. The Conference reassembled in March, 1920, to consider the recommendations of the Special Committee, namely, that steps be taken to obtain a Royal Charter for the Bureau, that the Charter make provision for the appointment by contributing Universities and University Colleges of a "Bureau Council," and that the Universities be requested to intimate to the Bureau whether they approve generally of the foregoing proposals. The Conference decided to express no opinion on the Special Committee's recommendations, but to transmit them to each of the Universities sending Delegates to the Congress. Of thirty-six answers received regarding the Royal Charter, nine were in favour of an application, twenty-five were against, and one was neutral. Twenty-two overseas Universities did not reply. The majority of the Universities

would appear to have assumed that the question of the appointment of a Bureau Council depended upon that of applying for a Royal Charter, and made no suggestion that such a Council should be contemplated under Articles of Association.

At this meeting of Conference oral reports were made by members of the Delegation which had recently visited the Universities of Belgium by invitation of the Belgian Government. The full reports of the University Delegations to America, to France, and to Belgium were printed at the expense of the Foreign Office, and distributed by the Bureau.

Attention having been called to the destruction of the libraries of Louvain and Nancy, and to the loss of books and instruments by the University of Lille, the Bureau undertook to collect and forward donations from the Universities, from Societies, from publishers, and from private persons. Very large numbers of books were sent to the Universities of Louvain and Nancy. The Universities of the United Kingdom have also made contributions in books and in money to the Universities of Czecho-Slovakia and Yugo-Slavia, and to some of those of the Central Powers.

Special Conferences.—In the spring of 1918 Mr. Balfour informed the Honorary Secretary that he purposed proposing to the Universities that they should send a Delegation to America. He ultimately decided to summon a CONFERENCE AT THE FOREIGN OFFICE on May 9th. In addition to the Foreign Secretary there were present: the President of the Board of Education, the Secretary for Scotland, the Chief Secretary for Ireland, two representatives of each of the eighteen Universities of the United Kingdom and the President of the Royal Society of Literature (the Marquess of Crewe, K.G.). In his speech to the Conference Mr. Balfour stated that whilst in the United States he was frequently asked to encourage British Universities to take a more active share in the postgraduate work of American students who, before the War, went to Germany in large numbers. He declared himself anxious not merely to fill the gap inevitably made by the exclusion of Germany from the place she has hitherto occupied in advanced teaching and in the promotion of research, but also to strengthen the higher intellectual bonds which unite us with our Allies. Profoundly interested in things academic, he recognized that it was on the postgraduate teaching side that our Universities have fallen behind; it is not the side to which they have devoted most trouble. Having trained a student, they are satisfied if they give to him, supposing he shows ability, some opportunity of finding out what is meant by research. Common action amongst British Universities is difficult, owing to the

extraordinary variety in their history and character—variety which he considered extremely valuable and desirable. He rejoiced that they had not been moulded by the State. It was, however, desirable that some machinery should be found through which the great body of University Institutions and life could speak on occasion with a common voice. In Paris or in Rome University feeling had this opportunity of expression, whereas our President of the Board of Education is not Minister of Public Instruction for the whole country in the continental sense; he cannot speak officially for the Universities of Scotland, Ireland, or even, in a sense, for the University of Wales.

Mr. Balfour referred to the Universities Congress of 1912 and to the Universities Bureau which it initiated, but he would like to see these tentative efforts at common expression extended. As the Universities increase in importance, the need for a common mechanism of expression would become more and more apparent.

Mr. Fisher, in referring to encouragement of postgraduate work, said that he regarded it as absolutely necessary that in the future students should have the opportunity of migration, in order that, in the later stages of their training, they may sit under distinguished teachers of their choice. He also emphasized the need for providing greater facilities for the discussion by the British Universities of matters of common interest.

The following resolutions were adopted :—

(1) "That this Conference of the Universities of the United Kingdom recognizes the importance of facilitating and actively developing intellectual intercourse between the various nations now allied against Germany, and cordially welcomes the steps that have been and are being taken to make attendance at the Universities more attractive to students from the United States, France, Italy, and the other Allied countries."

(2) "That this Conference of the Universities of the United Kingdom sends in this crisis of our common ordeal its cordial greetings to the Universities and Colleges of the United States, and gladly accepts, on behalf of the Universities, the invitation extended to them by the Council of National Defence to appoint representatives to visit the United States in the coming autumn. It requests the Conference, which is to meet to-morrow, to make the necessary arrangements for the visit in consultation with His Majesty's Government."

(3) "That this Conference considers it desirable in the interests of the Universities and of the nation that steps should be taken for promoting greater co-ordination and power of mutual consultation among the Universities of the United Kingdom, whether

by forming Standing Committees of the Universities, or by developing and extending the powers of the Bureau of Universities of the Empire, or otherwise, and commends this question to the consideration of the Conference which is to meet to-morrow."

In pursuance of this resolution, at the meeting of the Standing Conference on the following day, the Standing Committee of Vice-Chancellors and Principals was set up, as already stated.

The further arrangements for the despatch of the Mission to America were entrusted to the Bureau.

In the summer of 1918 it was proposed that the Bureau should organize a Deputation to the President of the Board of Education and the Chancellor of the Exchequer for the purpose of pressing upon them the need of the Universities and Colleges of increased financial aid. It was arranged that the Deputation should consist of representatives of every University in the United Kingdom, of the non-constituent University Colleges, the Royal Albert Memorial College of Exeter, the Manchester College of Technology, the Schools and Colleges of the University of London, and the members of the Bureau Committee, a total of sixty-seven persons. The members of the Deputation met in Conference at the Imperial Institute on November 22nd, and were received at the Board of Education by the President and the Chancellor of the Exchequer on the following day. (By special permission, a *verbatim* report of the proceedings was printed.)

In March, 1919, a CONFERENCE was summoned to receive the report of the members of the University Mission which had visited the greater number of the Universities of the United States and some Canadian Universities, during their tour which lasted from September, 1918, to January, 1919. (The proceedings were printed.) This meeting resulted in the setting up of the Interchange Committee of the Bureau, appointed by the Standing Conference in May, 1919, and consisting of the members of the Bureau Committee who represent Home Universities, the five members of the University Mission who are not members of the Bureau Committee, one member nominated by the American University Union, one member nominated by the American National Council on Education, and three co-opted members.

In July, 1920, a CONFERENCE was held to consider the general question of the desirability of raising the fees payable by students and the steps that should be taken to bring some degree of uniformity into any increase that might be approved. It was resolved "that in the opinion of the Conference it is necessary that tuition fees in the Universities and University Colleges should be raised." "That this Conference recommends that

normally the increase shall not be less than 25 per cent." "That in the opinion of this Conference neither this increase, nor any practicable increase in fees, will do more than partially to meet the needs of Universities and University Colleges."

In September, 1920, the members of the Standing Committee of Vice-Chancellors and Principals met in CONFERENCE representative Principals of the TRAINING COLLEGES of the United Kingdom. Mr. R. G. Mayor, C.B., of the Board of Education, the Chairman and Executive Officer of the National Committee for the Training of Teachers in Scotland and the Chairmen of the Provincial Committees, and two Commissioners of National Education in Ireland were also present. The following resolution was agreed to *nem. con.*: "In the opinion of the representatives of the Training Colleges here assembled in Conference it is desirable that closer connexion should be established between the existing institutions for the training of teachers and the Universities of the country." (A *verbatim* report of the proceedings was prepared and distributed.)

STANDING COMMITTEE.

The Standing Committee of Vice-Chancellors and Principals meets once a quarter for the discussion of matters of interest to the Universities in common. The Bureau prepares for it such Returns of Information and conducts such correspondence as it may direct. The Committee has no executive functions. After mutual consultation its members bring before their respective Councils and Senates such of the matters discussed as they deem suitable. The following are amongst the more important of the subjects which have been discussed by the Standing Committee: The admission to the Home Universities of Australian, Canadian, and other overseas students who had served in H.M. Forces; the Government Scheme for training demobilized officers and men; Regulations for the Ph.D. degree; the preparation of pamphlets on facilities for advanced study and research in the several Universities and their distribution by the Bureau; the need for an increase in the contributions to the Superannuation Fund by the Universities (which led to the adoption of 10 per cent. in place of 5 per cent.); arrangements for sending a University Mission to France at the invitation of the French Government and to Belgium at the invitation of the Belgian Government; the equivalence of degrees and diplomas of foreign Universities with those of Universities of the British Empire; the recognition by the Universities of the United Kingdom of matriculation requirements of

Universities outside the United Kingdom; the professions for which students were preparing in 1920 (a classified list was prepared by the Bureau and distributed to the Universities, the Board of Education, the University Grants Committee, etc.); the salaries of professors and lecturers, the scales to be adopted, and the need for increases; the selection of subjects to be discussed and all other arrangements for the Congress of 1921.

Interchange Committee.

This Committee, established in 1919, gives special attention to work which has, since the first meeting of the Bureau Committee in 1913, been recognized as a primary function of the Bureau. In that year letters were addressed to all Universities overseas asking for their co-operation, and various other steps were undertaken with a view to the promotion of interchange of teachers and the migration of students. Immediately after the establishment of the Bureau its assistance in securing visiting professors was sought by certain Indian Universities, and through the Bureau it has been arranged each year, until 1917, that two distinguished scholars should spend the cool season in India lecturing, and more especially advising the Indian Colleges with regard to the teaching of the subjects in which they were, respectively, interested. As it was contemplated that the increased funds assigned to the Indian Universities after the Great Durbar would be largely used in securing the services of visiting professors, a general inquiry was addressed to the members of the staffs of all the Universities of the Empire to ascertain the names of those who would be willing to consider an invitation. A classified list of those who responded, with their qualifications, was compiled. The policy of the Indian Universities has since changed, and they no longer call for the service of visiting professors.

Since the appointment of the Interchange Committee each University and College in the United Kingdom has been asked to appoint a correspondent, whose duty it is to familiarize students with the idea of migration. Notices have been supplied to all common rooms asking teachers who contemplate travelling in other countries, and especially in the overseas Dominions, to communicate with the Bureau in order that arrangements may be made for their reception, and for their utilization for occasional lectures and advice. Similarly all teachers in the overseas dominions who contemplate visiting the United Kingdom have been asked to inform the Bureau of their plans and movements. Through the American University Union the Bureau receives

the names of all American University teachers who are coming to England and secures for them, if they wish, opportunities of lecturing in our Universities and Colleges. Proposals have been made that where certain orders of chairs are vacant, notably in languages, foreign teachers might be invited to fill them for a short period, say a term or a year; that the Bureau should endeavour to secure for professors who, either through long service, or failure in health, might benefit by a change of employment, temporary positions in one of the Dominions, in the United States, or on the Continent.

In co-operation with the American University Union, the Office National, and the Danish Students' Bureau, arrangements are made for the profit and convenience of students migrating in either direction, and especially for those who wish to follow holiday courses. Through the Office National temporary posts in French Universities and Lycées have been obtained for a large number of British graduates who wished to become proficient in colloquial French.

Finance.

During the six years before incorporation, July, 1912, to July, 1919, the sum of £2,398 was contributed to the funds of the Bureau by twenty-nine Universities, viz.:—Birmingham, £15; Bristol, £60; Cambridge, £125; Durham, £10; Leeds, £20; Liverpool, £50; London, £130; Manchester, £30; Oxford, £75; Sheffield, £5; Wales, £50; Aberdeen, £20; Edinburgh, £25; Glasgow, £125; Belfast, £100; National of Ireland, £20; Alberta, £40; Bishop's College, £20; British Columbia, £20; Dalhousie, £20; King's College, £40; Laval, £80; McGill, £75; Mount Allison, £20; St. Francis Xavier, £10; Saskatchewan, £20; Toronto, £200; Trinity, Toronto, £40; Western, Ontario, £10; Adelaide, £100; Melbourne, £360; Queensland, £100; Sydney, £200; New Zealand, £50; Cape of Good Hope, £25; Bombay, £25; Calcutta, £10; Madras, £60; Punjab, £25.*

During the same period of six years the total expenditure was as follows:—Salaries, Assistant Secretary (fifteen months), £320; Clerk and occasional clerks, £919; net cost of *Yearbook* (three issues), £598; printing stationery and postage, £396; rent, lighting, heating and cleaning, with use of telephone, £168. Total £2,401.

Since incorporation the following annual grants have been made to the Bureau, viz.:—eighteen Universities of the United Kingdom,

* The irregularity in the figures is largely due to the fact that in some cases the grant was paid throughout the war-years, in others it was diminished or discontinued.

each £100; two University Colleges, each £50, and one University College, £25. Universities overseas—Bishop's College, £20; Dalhousie, £20; Laval, £60; McGill, £ ; McMaster, £10; Mount Allison, £20; Saskatchewan, £10; Toronto, £50; Trinity, Toronto, £10; Melbourne, £40; Queensland, £10; Sydney, £50; Madras, £10; Mysore, £50.

The accounts of the Bureau are printed and circulated annually to the Universities of the Empire.

(*Signed*)

DONALD MACALISTER,
Chairman.

ALEX. HILL,
Secretary.

MEETING OF DELEGATES.

REPORT OF PROCEEDINGS.

CONGRESS OF THE UNIVERSITIES OF THE EMPIRE, OXFORD, 1921.

DELEGATES' MEETING.

A MEETING of Delegates was held on the afternoon of Tuesday, July 5th to receive the Report of the Universities Bureau.

On the motion of Sir Robert Falconer, seconded by Prof. H. Darnley Naylor, Sir Donald MacAlister was elected to the Chair.

The Chairman proposed that the Report of the Bureau, now presented, be received and approved for distribution (*vide* pp. 430 to 447).

Carried *nemine contradicente.*

Dr. J. G. Adami then proposed that the Standing Orders adopted by the Standing Committee of Vice-Chancellors and Principals which had sat as the Organizing Committee of the Congress, under which Congress had met on this, the first, day of its proceedings, be amended.

After discussion, Dr. Adami's motion was withdrawn, and the following resolution was adopted :—

> "That in place of the fifteen minutes allowed under the Standing Orders to each of the members of Congress who, at the request of the Organizing Committee, has prepared a paper, in which to read it, ten minutes be allowed to him in which to speak to his paper; and that for subsequent speakers the time allowance be reduced from ten minutes to five minutes."

The meeting was then adjourned to Friday, July 8th.

At the resumed Meeting on Friday, July 8th, the Chairman read to the Meeting *seriatim* the Resolutions adopted by the Delegates to the first Congress of the Universities of the Empire which met in London in 1912 and asked that, in so far as they were still effective, they be reaffirmed or amended in such manner as, in the opinion of the Delegates, might appear to be desirable in each case. The successive resolutions were thereupon dealt with as follows :—

> "(1) That in the opinion of this Congress it is desirable that a Committee be appointed for the purpose of instituting similar Congresses at intervals of five years."

It was agreed that the next Congress be held in 1926, the Committee for this purpose being the Bureau Committee.

Approved.

"(2) That the Home Universities Committee of this Congress be invited to arrange for an Annual Meeting of the representatives of the several Home Universities."

The Chairman explained that this was a domestic matter primarily affecting the Home Universities alone. Although, owing to the war, the Annual Conferences contemplated when the resolution was originally adopted had not been held, effect had been given to the intention of the resolution by summoning *ad hoc* Conferences on a variety of subjects of general interest to the Universities (*vide* Bureau Report, p. 438). The Bureau Committee had acted, and would now continue to act, as the Committee referred to in the resolution.

Approved.

"(3) That in the opinion of this Congress it is desirable that the Universities of the various Dominions of the King overseas should arrange for periodical meetings of their representatives."

To this resolution also effect had been given; in Canada by the Conference of Canadian Universities; in Australia by the establishment of the Advisory Committee of Australian Universities; and in South Africa, where, since the Congress of 1912, the single University of the Cape of Good Hope had been replaced by the four Universities of South Africa, Cape Town, Stellenbosch and Johannesburg, by the establishment of the Joint Committee. The delegates of the Indian Universities, who had held a meeting on June 30th at the office of the Bureau, adjourned to July 6th at Oxford, had also agreed that it is desirable that an Association of Indian Universities should be formed.

Approved.

"(4) That a Committee of this Congress be now appointed to take steps for the formation in London of a Bureau of Information for the Universities of the Empire."

This was a temporary measure, the purpose of which had been accomplished by the incorporation of the Universities Bureau.

"(5) That the Committee consist of fourteen members, of whom seven shall be nominated by the Home Universities Committee of this Congress, and seven by the Universities

overseas, viz., for Canada, two; Australia, one; New Zealand, one; the Cape (South Africa), one; India, one; other parts of the Empire, one."

It was agreed, after discussion, that it is undesirable that any change be made in the constitution of the Bureau as defined by the Articles of Incorporation sanctioned by the Board of Trade in 1919 as amended in March, 1921, or in the general distribution of representation on the Bureau Committee of the Universities of the Empire agreed on by the Delegates to the Congress of 1912.

The Chairman then proposed to the Congress the following resolution embodying a recommendation of the Bureau Committee :—

> " That, if no woman be appointed to the Bureau Committee as representative of a University or group of Universities, power be conferred upon the Committee to co-opt one or more women as assessors."

This resolution, seconded by Mrs. Tout (Manchester), was carried *nemine contradicente.*

It having been reported that in accordance with the Articles of Association the representatives of the Universities of Cambridge; of Scotland; of Birmingham, Bristol, and Wales; of Durham, Leeds, Liverpool, Manchester, and Sheffield; of Canada; of South Africa; of India; and of New Zealand, all of whom had held office for a term of five years, ceased at the close of the Congress to be members of the Bureau Association, the delegates of the Universities of the several Dominions overseas and of the Empire of India, either immediately at the meeting itself, or after sectional meetings held subsequently for the purpose, nominated as representatives of *Canada*, President H. Marshall Tory and Dr. George Adami; of *South Africa*, Principal T. Loveday; of *New Zealand*, Mr. J. W. Joynt; and of *India*, Sir Michael E. Sadler.

The delegates of the Home Universities decided to refer the nomination of representatives to fill the places vacant in the Bureau Association to the proper authorities of the several Universities or groups of Universities with whom the nominations rested.

Professor J. T. Wilson (Sydney) then brought forward a series of memoranda drafted by a Committee appointed at a preliminary

Conference of delegates of the Universities of Canada, Australasia, and South Africa, which had met at the Bureau office on July 1st.

It was proposed that the memoranda should be submitted to the Bureau Committee, the Chairman stating that if this proposal were accepted the Bureau Committee would submit the memoranda to the Standing Committee of Vice-Chancellors and principals. A resolution to this effect was carried *nemine contradicente.*

The Chairman, having given an account of the work of the Bureau during the nine years which had elapsed since its establishment in 1912, moved that the Report of the Bureau Committee, which had been in the hands of delegates since the preceding Tuesday, and had been approved for distribution, be now adopted by the Delegates.

The resolution was seconded by President W. C. Murray (Saskatchewan), and carried *nemine contradicente.*

Resolutions expressing appreciation of the "admirable way in which Sir Donald MacAlister had presided over the deliberations of the delegates," and of "the courteous, patient, and efficient manner in which Dr. Hill and Mr. Dawson had attended to the business of the Congress," having been carried by acclamation, the proceedings closed.

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